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CATALOGUE OF THE PLANTS OF JASPER COUNTY, MISSOURI

(Fernworts and Flowering Plants)

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Introduction

This catalogue is based upon collections of plants made by the writer during the years from 1901 to 1913. The serial numbers following each species and variety listed refer to the plants collected by me, unless otherwise indicated; and the specimens are now deposited in the herbarium of the Missouri Botanical Garden. Many duplicates have been distributed to herbaria and collectors in various parts of this country and abroad. The nomenclature used is, with a few exceptions, that of the seventh edition of Gray's 'Manual.'

I believe that this is the first attempt at enumerating the native plants and those growing spontaneously in this part of Missouri. Local catalogues and floras have been published covering several other sections of the state—Jackson County and the vicinities of Louisiana, St. Louis, and Columbia. In 1886 Professor S. M. Tracy published a list of the plants then known to occur in the state, and in 1895 a list of the woody plants, prepared by Mr. B. F. Bush, was published by the State Horticultural Society. In these two works reference is made to plants of Jasper County. Two of the species mentioned by Professor Tracy as occurring in the county have not been found by the writer. These are *Castanea pumila,* said to have been collected by Professor Broadhead, and *Callirhoe involucrata,* which is recorded as having been collected by Letterman. The latter is probably a geographical error. In Mr. Bush's list 53 woody species are mentioned for Jasper County. All of these, with the exception of *Castanea pumila* and a few which have been relegated by changes in nomenclature and more recent study, have been confirmed.

But little botanical work had been done in the area prior to the beginning of the writer's collection. In connection with the work of the State Geological Survey some collections were made by Professor Garland C. Broadhead, who visited Jasper County. Mr. B. F. Bush had also done some collecting about Joplin and Carthage, and possibly others may have collected in the county; but it may be said to have been practically an unknown field, and that it has proved an interesting one is attested by the fact that since the beginning of the present century a number of eminent botanists have visited it. Among these is Dr. C. S. Sargent, the distinguished director of Arnold Arboretum and author of the 'Silva of North America,' who has made several trips through the county and has described about 40 new species of trees and shrubs, based wholly or in part upon Jasper County material. Most of these are of the genus *Crataegus,* the red haws, of which many interesting forms are found here. Mr. Alfred Rehder, of Arnold Arboretum, has also described a new variety of crabapple, *Malus ioensis,* var. *Palmeri,* and an elderberry, *Sambucus canadensis,* var. *submollis,* found in our area. *Rhexia latifolia* is a new species of the meadow-beauty collected in Jasper County and described by Mr. B. F. Bush. Mr. K. K. Mackenzie has recently published a description of *Geocarpon minimum,* a new and anomalous genus, at present known only to occur in our county. Several other plants are still subjects of study and may prove worthy of distinction.

In addition to the new species brought to light, a number of previously described plants, but not before collected or known in Missouri, and several that are not given as occurring in the range of Gray's 'Manual' have been found. Among these may be mentioned *Amphilophis Torreyanus, Setaria imberbis, Stenophyllus ciliatifolius, Scirpus carinatus, Carex arkansana, Crataegus spathulata,* var. *flavantha, Lathyrus pusillus, Vitis Linsecomii,Myriophyllum proserpinacoides, Daucus pusillus, Lamium purpureum, Hedeoma acinoides, Diapedium brachiatum, Chrysopsis pilosa, Erigeron tenuis, E. nudiflorus* and *Marshallia caespitosa.* Plants of peculiar interest have been submitted to specialists on various groups, and local collections are cited in a number of recently published books and pamphlets, so that Jasper County can no longer be regarded as *terra incognita* in the botanical world.

It is not claimed, however, that the present catalogue is by any means complete or, indeed, anything but a foreword on the flora of the region. While every effort has been made to secure accuracy and to exclude doubtful and invalid species, it is scarcely to be hoped that no errors have crept in. In the present state of botanical science it is highly probable that changes in nomenclature and in the taxonomic interpretation of certain groups will take place for some years to come; and, no doubt, future investigators will take different views as to the validity of some species here listed. It is very likely, also, that there are a number of plants growing in the county that have so far escaped the attention of the collector. For obvious reasons the immediate vicinity of the writer's home, in the southwestern part of the county, has been most thoroughly explored. Excursions have been made as opportunity offered into other sections, and considerable collecting has been done in Jasper, Preston, and Sarcoxie Townships, but some portions of the county have received very little attention, especially the northeastern part, which is least accessible at present.

The flora of a region, moreover, is not a fixed quantity. Various causes, at present chiefly cultural, are responsible for the introduction of plants from other sections of the country and from foreign lands. On the other hand, as the land comes more and more under cultivation many of the rarer and less hardy species are likely to be exterminated, and some, no doubt, have already disappeared since the settlement of the country by Europeans.

The struggle for existence is perhaps as keen in the plant world as in any department of nature. Of the countless number of seeds and spores produced by some species, but a very small per cent find an opportunity to germinate, and a large proportion of the young seedlings are crowded or starved out, fall a prey to enemies of the animal or plant world, to adverse weather conditions, or to other causes. Those that survive do so, often, by waging a fierce and successful battle with other species for the occupation of available ground. In this struggle, which has been going on for countless ages under changing conditions, forms have constantly been modified and those that could not adapt themselves to new environments have been exterminated and replaced by hardier and more fit races.

Deep buried in the shales of our coal measures are impressions of plants (principally ferns and other cryptogams) that flourished in the tropical marshes of a far-off period. Since then countless races of plants have come and gone, many of them leaving no trace, but under rare, favorable conditions fragments of some of them have been preserved; so that the paleobotanist, digging in the clays and shales of past geological ages, catches here and there a glimpse of those vanished floras, just as the archaeologist delves in the ashes of a ruined city or in the depths of some grass-grown mound in an effort to reconstruct at least an outline of the history of the past.

The layman, while recognizing the utility of forestry or the collection and study of plants of cultural, medicinal, or other economic value, is often puzzled to understand the object of purely scientific botany. To the scientist, however, regarding each plant as a wonderful living organism, marvelously adapted to its environment, with specific functions to perform, definite relationships with other species, and a history extending back into the remote past, even the commonest weed is an object of interest and worthy of study. And it is only by their systematic and critical study that a comprehensive knowledge of Nature's methods and the laws of life may be gained.

It is important, therefore, that the plants of all parts of the world should be collected, studied, and preserved; and I trust that the following catalogue and the collections upon which it is based, although dealing only with the plants of a limited area, will be of some value and interest to future investigators.

I wish to express my sincere thanks to all of the botanists and friends who have aided and encouraged me in the collection and study of the plants of southwest Missouri. To Mr. B. F. Bush, whose unflagging interest in the work from its beginning has been one of the chief stimulants to its prosecution, I am under many obligations, both for the determination of plants during successive years when my time and botanical knowledge were both very limited, and for the contribution of literature and specimens for comparison. As the pleasant companion, too, of many botanical excursions I have had the benefit of his unequaled knowledge of plants in the field. I am also greatly indebted to Dr. C. S. Sargent for the interest he has taken in our woody flora and its investigation. Recognized as the highest authority on North American trees, his publication of several new species from Jasper County has made the region of considerable interest to the botanical world. Thanks are due to Dr. Ezra Brainerd for examining and revising the violets; to Mr. F. W. Pennell for checking the species of *Agalinis* and allied genera and for his key to this interesting group; to Mr. W. H. Blanchard for valuable notes on the *Rubi,* and to others. I also wish to make acknowledgments to Dr. George T. Moore, Director of the Missouri Botanical Garden, for affording the opportunity to publish this paper, and to Dr. J. M. Greenman, Curator of the Herbarium, for valuable suggestions and interest shown in the work.

Description of Jasper County

Jasper County, Missouri, is situated near the southwestern corner of the state, being in the western tier of counties bordering on Kansas, and but the third north from the Arkansas line. Its northern boundary is formed by Barton and Dade Counties, the eastern by Dade and Lawrence, and the southern by Newton County. In outline it is nearly rectangular. The width from north to south is about 21 miles, and length from east to west about 32 miles, the area being 632 square miles. The center of the county is approximately in latitude 37°10′ north, and longitude 94°20′ west of Greenwich. The elevation ranges from about 825 feet in the valley of Spring River near the western boundary to about 1175 feet on the highest hills in the southeastern part.

Topographically, the area is a dissected plain, with hills of low elevation, situated on the western slope of the Ozark dome. Most of the country may be described as an upland prairie with considerable broken, hilly ground bordering the streams, especially along Center Creek in the southern portion. Through this plateau the larger streams have carved valleys of varying widths, in the alluvial plains of which they meander from bluff to bluff. These valleys, originally heavily wooded with deciduous forests of oak, maple, ash, walnut and many other trees, are now nearly all cleared and under agriculture. Remnants of the low forests remain only here and there, but considerable areas of the rocky, broken uplands in the southern part are still covered with a virgin or second growth of somewhat stunted timber, in which oaks and hickories predominate.

The drainage system is simple, consisting of Spring River and its tributaries, flowing in the main from east to west. The most important of these are North Fork and Dry Fork on the north, and, to the south, Center Creek with its affluents—Jenkins Creek, Jones Creek, and Grove Creek—and Turkey Creek, which flows directly into Spring River a little beyond the Kansas boundary. Spring River and the creeks to the south are perennial streams fed by many springs. North Fork and Dry Fork are intermittent but flow throughout the greater portion of the year. There are no large lakes or other natural bodies of water, but a few bayous or old channels along Spring River and Center Creek afford a habitat for some aquatic plants.

With the exception of the alluvial valleys the soil is largely residual, resulting from the decomposition of the underlying rocks. In consequence, there is a rather close correlation between the geology and local plant distribution.

The geological formations represented are the Mississippian series, or Subcarboniferous, and the Pennsylvanian series, or Coal Measures. The Mississippian occupies much the greater portion of the area. The rocks of this series consist mainly of heavily bedded, semi-crystalline limestones interbedded with lenses of chert, which in places predominates over the limestone. As the silicious rocks are much less soluble than the calcareous beds, large deposits of angular chert fragments, more or less imbedded in red iron-stained clay, occur locally where the higher beds of limestone have been removed by erosion. The horizontal strata of limestone form bold escarpments and bluffs along the river valleys and sometimes outcrop through the mantle of residuum on slopes and high hills.

The Pennsylvanian formations, consisting of shales and sandstones of the Cherokee group, occupy the northwestern corner of the county, covering portions of Jasper and Twin Groves and the greater part of Preston and Duval Townships. Small isolated areas to the southward are too limited in extent to have much influence upon the flora. The rocks of this series, being soft and friable, give rise to a distinct topography with gentle slopes and low hills, through which flow sluggish intermittent streams. The influence upon the flora of these differences in soil and physical features is quite marked.

An interesting geological feature is the occurrence of water-worn river gravels covering some of the higher elevations through the south-central portion of the county. These deposits, which have been referred to the Lafayette Gravel of Tertiary age, are of very limited extent, but will be mentioned in connection with the flora.

In so limited an area climatic influences are, of course, essentially uniform, and the variations in altitude are not sufficiently great to affect plant life except indirectly. Over the bulk of the area, underlaid by Mississippian rocks, the factors which determine plant associations and restrict the range of certain species are moisture, shade, and the local character of soil and surface rock. The timbered portion may be divided into low woods, bluffs, upland woods, and copses or thickets.

The low woods are confined to the alluvial valleys of the larger streams. The lower parts are subject to overflow and farther back from the streams a second terrace or bottom is often found. Characteristic species of the low woods are *Carya illinoensis, Salix longifolia, S. nigra, Betula nigra, Quercus macrocarpa, Benzoin melissaefolium, Platanus occidentalis, Acer saccharinum, Adelia acuminata, Aristolochia tomentosa, Onoclea sensibilis, Cinna arundinacea, Carex tribuloides, C. crus-corvi, C. Grayii*, var. *hispidula, Commelina hirtella, Saururus cernuus, Laportea canadensis, Pilea pumila, Polygonum virginianum, Iresine paniculata, Iodanthus pinnatifidus, Arabis dentata, Ranunculus septentrionalis, Lycopus rubellus, Diapedium brachiatum, Galium Vaillantii, Heracleum lanatum, Sicyos angulatus, Lobelia cardinalis, Eupatorium coelestinum*, and *Aster Tradescanti.* Some of these species extend their range through the second bottoms to the bases of the bluffs or into low prairies where moisture is abundant, and mingled with them are many plants more common in the latter situations.

The alluvial valleys are usually bounded by cliffs, rarely more than 50 or 60 feet in height, along the slopes and bases of which is found a very characteristic and varied flora, especially where the face of the cliff has a north or east exposure. These bluffs are usually well wooded, affording shade and protection for herbaceous species; they are supplied with abundant seepage water, have accumulations of soil washed from the hills above and are enriched by the leaf mould and vegetable humus of ages. On account of their inaccessibility and little value for utilitarian purposes they have remained more nearly in a primitive state than any other portion of the area. Here are found many plants common to the northeastern states, most of the ferns and orchids, and some of our most beautiful and delicate wild flowers. The list of plants peculiar to this zone is a long one but the following may be mentioned as typical: *Ulmus fulva, Acer saccharum, Ostrya virginiana, Asimina triloba, Staphylea trifolia, Adiantum pedatum, Camptosorus rhizophyllus, Polystichum acrostichoides, Cystopteris bulbifera, C. fragilis, Botrychium virginianum, Brachyelytrum erectum, Sphenopholis pallens, Poa Wolfii, Carex sparganioides, C. laxiflora,* var. *blanda, C. oligocarpa, Arisaema triphyllum, Tradescantia virginiana, Erythronium americanum, E. albidum, Smilacina racemosa, S. stellata, Polygonatum commutatum, Trillium sessile, Cypripedium parviflorum, Corallorrhiza odontorhiza, Liparis liliifolia, Asarum canadense, Ranunculus recurvatus, Aquilegia coccinea, Cimicifuga racemosa, Caulophyllum thalictroides, Sanguinea Dilleniana, Dicentra Cucullaria, Corydalis flavula, Arabis laevigata, Sedum Nevii, Euphorbia heterophylla, Erigenia bulbosa, Osmorhiza Claytoni, O. longistylis, Campanula americana, Solidago arguta, Polymnia uvedalia,* and *Senecio obovatus,* var. *rotundus.*

Where the bluffs have a western or southern exposure and are less shaded a somewhat different type of vegetation appears. Here are found *Sapindus Drummondi, Cheilanthes Feei, Notholaena dealbata, Asplenium parvulum, Festuca nutans, Bromus purgans, Uniola latifolia, Camassia esculenta, Commelina crispa, Arabis hirsuta, Heuchera hirsuticaulis, Hypericum cistifolium, Scutellaria cordifolia, Onosmodium hispidissimum,* and *Lonicera dioica.*

At the extreme edge of the bluff above may be found *Amelanchier canadensis, Celtis georgiana, Crataegus obscura, Rhus trilobata,* and many of the herbaceous species common to the limestone barrens and dry woods.

Above the escarpment a belt is usually occupied by the dry, rocky woods, more or less broken by ravines, up which the rich wood species extend. Characteristic species here are *Carya alba, C. megacarpa, C. ovalis* and its variety *obcordata, Quercus stellata, Q. velutina* and variety *missouriensis, Q. marilandica, Cornus florida, Fraxinus americana, Ceanothus americanus, Panicum linearifolium, P. huachucae* and the variety *silvicola, Danthonia spicata, Gymnopogon* *ambiguus, Cyperus ovularis, Carex retroflexa, C. varia* with variety *colorata, Luzula campestris*, var. *bulbosa, Spiranthes gracilis, Anychia polygonoides, Lespedeza virginica, L. Stuvei, L. hirta, Desmodium rotundifolium, D. bracteosum, Ascyrum hypericoides, Lechea villosa, L. tenuifolia, Viola pedata*, var. *lineariloba, Asclepias quadrifolia, Tephrosia virginiana, Monarda Bradburiana, Scutellaria incana, Aureolaria grandiflora, Agalinis tenuifolia, Hieracium Gronovii, H. scabrum, Solidago nemoralis, S. radula, S. petiolaris, S. Wardii, Aster patens, A. anomalus, A. azureus, A. turbinellus, A. linariifolius, Erigeron pulchellus*, and *Parthenium integrifolium.*

The most extensive and notable floral division is perhaps that of the upland prairies, and here the plants of the plains are the most conspicuous feature. Among prairie plants may be mentioned *Andropogon scoparius, A. furcatus, Sorghastrum avenaceum, Sporobolus asper, Cyperus acuminatus, Erythronium mesochoreum, Silene regia, Ranunculus fascicularis, Draba brachycarpa, Baptisia bracteata, B. australis, Petalostemum purpureum, Astragalus distortus, A. mexicanus, Desmodium illinoense, D. canadense, Lespedeza capitata* and variety *sericea, Strophostyles pauciflora, Linum medium, Euphorbia corollata, Oenothera muricata, O. biennis, Gaura Pitcheri, Polytaenia Nuttallii, Dodecatheon Meadia, Apocynum cannabinum, A. pubescens, Sabatia campestris, Asclepias tuberosa, A. verticillata, A. stenophylla, Acerates floridana, A. viridiflora, Phlox pilosa, Lithospermum angustifolium, Salvia Pitcheri, Agalinis fasciculata, A. tenuifolia, Houstonia minima, Specularia biflora, Prenanthes aspera, Hieracium longipilum, Vernonia crinita, Eupatorium altissimum, Liatris scariosa, L. pycnostachya, Aster salicifolius, Silphium laciniatum, S. integrifolium, Parthenium repens, Brauneria pallida, Helianthus scaberrimus, H. grosseserratus, H. mollis, Coreopsis grandiflora, C. palmata, Helenium autumnale, Cacalia tuberosa*, and *Cirsium altissimum.*

Copses and thickets occupy swales or slopes bordering the dry woods, on the one hand, and the upland prairie, on the other. While containing many of the plants of the surrounding regions the thickets have quite a distinctive flora, for here are found many shrubs and vines and some herbaceous plants that seldom or never grow in other situations. Among the small trees are many species of *Crataegus* and *Prunus*, and a long list of sedges and grasses occur. *Ulmus americana* is frequently the only large tree along upland branches, and elsewhere large specimens of *Populus deltoides* occur far out on flat prairies. Along the branches and in wet depressions usually grow *Salix Wardi, Amorpha fruticosa, Cornus Amomum, Penthorum sedoides, Hibiscus incanus, H. militaris, Cicuta maculata, Asclepias incarnata, Lobelia siphilitica*, and *Lycopus americanus.* Occupying somewhat drier situations are *Celtis occidentalis, Corylus americana, C. rostrata, Ribes missouriensis, Opulaster intermedius, Malus ioensis*, var. *Palmeri, Rubus occidentalis, R. Andrewsianus, R. canadensis, Rosa setigera, Prunus hortulana, P. Munsoniana, Cercis canadensis, Zanthoxylum americanum, Ptelea trifoliata, Rhus glabra, R. copallina, Evonymus atropurpureus, Rhamnus lanceolata, Cornus asperifolia, C. Baileyi, Viburnum prunifolium, V. rufidulum, Symphoricarpos orbiculatus, Smilax rotundifolia, S. hispida, Clematis Pitcheri, Menispermum canadense, Cocculus carolinus, Celastrus scandens, Vitis cinerea, Ampelopsis cordata, Geum vernum, G. canadense, Cassia Medsgeri, Phaseolus polystachyus, Strophostyles umbellata, Galactia volubilis, Vincetoxicum carolinense, V. Baldwinianum, Scrophularia marilandica, Dasistoma macrophylla, Galium pilosum, G. circaezans, Triosteum perfoliatum, Rudbeckia triloba, Verbesina virginica*, and *Cacalia atriplicifolia.*

In addition to the area, of which the main floral zones are outlined above, there are several rather distinct regions in which a close association between the underlying geological features and the present plant life is clearly traceable.

The most extensive of these is the sand hill region or Barton upland, underlaid by Pennsylvanian strata, in the northwestern part of the county. This section is largely high prairie which slopes down to, and is limited by, the valleys of North Fork on the east and of Spring River on the south. Seepage springs and small, sluggish streams give a wet and somewhat swampy character to some portions. The soil is, for the most part, a sandy loam, with large blocks of sandstone on the surface of some of the higher hills and sandstone and shale outcropping along streams. Peculiar to this area, so far as has been observed within the county, are *Andropogon ternarius, Panicum scoparium, Setaria imberbis, Festuca Shortii, Eleocharis ovata, Rynchospora cymosa, Scleria ciliata, Scirpus carinatus, Carex arkansana, Juncus monostichus, J. effusus, J. polycephalus, J. robustus, Polygonum sagittatum, Froelichia gracilis, Geocarpon minimum, Ranunculus oblongifolius, Rhexia latifolia, Proserpinaca palustris, Centunculus minimus, Chrysopsis pilosa,* and *Cirsium discolor.* Other species, more or less characteristic of this region but which have also been found elsewhere in the county, are *Quercus palustris, Cyperus esculentus, Fimbristylis castanea,* var. *puberula, Rynchospora glomerata, Scleria triglomerata, Carex umbellata, C. stipata, Luzula campestris,* var. *bulbosa, Polygonum tenue, Anemone caroliniana, Polygala sanguinea, P. incarnata, Crotonopsis linearis, Viola pedata,* var. *lineariloba, V. sagittata, Monarda mollis, Linaria canadensis, Castilleja coccinea,* and *Marshallia caespitosa.* Of the above list, *Froelichia gracilis* and *Chrysopsis pilosa* have only been found on an isolated sandstone hill at the state line, near Smithfield, and *Scirpus carinatus* in lower ground near the same place.

A region of much more limited extent, but with a distinct flora, is situated in the valley of Turkey Creek, two miles northwest of Joplin, where the Grand Falls chert of the Mississippian series outcrops. The surface of the chert is irregular, with hummocks and basin-like depressions of various sizes. Many of the latter contain thin layers of soil washed from the higher ground and in wet times are filled with rain-water, which, since the rock where unfractured is impermeable, is retained until evaporated by the sun. The superabundance of moisture in rainy seasons and extreme dryness at other times, together with an almost total absence of shade, the sparsity of soil and other ecological factors, produces peculiar conditions clearly reflected in the flora, which is partly hydrophytic but mainly xerophytic and succulent. Some of the characteristic species are *Cheilanthes lanosa, Selaginella rupestris, Leptochloa fascicularis, Cyperus aristatus, Digitaria filiformis, Aristida basiramea, Allium mutabile, Polygonum tenue, Talinum parviflorum, T. calycinum, Portulaca pilosa, Selenia aurea, Sedum Nuttallianum, S. pulchellum, Lathyrus pusillus, Crotonopsis linearis, Opuntia macrorhiza, Spermolepis echinata, Linaria canadensis, Specularia leptocarpa, Coreopsis tinctoria,* and *Krigia occidentalis.* The chert formation is much more extensively exposed a few miles to the south along Shoal Creek in Newton County, where all of the above and several other peculiar species are found.[1]

Somewhat similar, though quite distinct, are the limestone barrens found at several places in the county, where horizontal strata of the Mississippian series appear on the surface. All of these are of quite limited extent but support a characteristic flora. Some of the best-marked localities are the following: one mile north of Jasper, on south side of Coon Creek; two miles southwest of Neck City, along a small branch; one mile north of Carterville, on south side of Center Creek and along a branch south and east of Carterville and Webb City. Typical plants of these limestone barrens are *Ophioglossum Engelmanni, Sporobolus pilosus, Sphenopholis obtusata, Bouteloua curtipendula, Cyperus aristatus, Camassia esculenta, Oxybaphus albidus, Arenaria patula, Talinum calycinum, Portulaca pilosa, Draba cuneifolia, Corydalis montana, Sedum pulchellum, Acalypha gracilens, Tragia ramosa, Euphorbia missouriensis, Malvastrum angustum, Mentzelia oligosperma, Opuntia humifusa, Chaerophyllum texanum, Heliotropium tenellum, Isanthus brachiatus, Galium virgatum, Aster oblongifolius,* var. *rigidulus,* and *Artemisia mexicana.*

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[1] See Palmer, E. J. Flora of the Grand Falls chert barrens. Acad. Sci. St. Louis, Trans. 19:97–112. 1910.

Some high hills near Prosperity and Duenweg, partly covered with deposits of Lafayette gravel, have a somewhat characteristic flora, although few, if any, of the species are peculiar to them. Antennarias are a conspicuous feature of the spring vegetation, and it is probable that one or more undescribed species occur here. Other plants that may be mentioned are *Panicum depauperatum, P. Werneri, Carex umbellata, C. Meadii, Fimbristylis castanea,* var. *puberula, Stipa spartea, Viola pedata,* var. *lineariloba* of which a white form is frequent, *V. sagittata, Lithospermum canescens, Senecio plattensis,* and *Marshallia caespitosa.*

Introduced plants, while quite numerous, do not as yet form a large percentage of the flora, but their invasion is steadily increasing, especially in the western part of the county where many railroads enter. Grasses and common weeds form the bulk of these emigrants. These flourish largely in waste places and in cultivated ground, and their distribution has little definite relationship to the native plants. Among species of recent introduction a few show a tendency to become wide-spread. *Lespedeza striata* is becoming common in dry rocky woods, and the white-flowered sweet clover, *Melilotus alba,* is frequently found along roadsides and railroads. The sand burr, *Solanum rostratum,* has in recent years become quite common in ballast or waste ground, but it shows little tendency to spread beyond such situations. *Helenium tenuifolium* is beginning to appear along railroads and bids fair to become a nuisance. *Perilla frutescens* is established at several stations and, judging by the rapidity with which it has spread in the bottoms of many Ozark streams, is likely to become common. Perhaps most pernicious of all is the Johnson grass, *Sorghum halepense,* which is established in a number of low fields.

From a study of the above and the following list it will be seen that the flora of Jasper County is a diverse and composite one. The plants of the near plains are perhaps the dominant element and the most striking feature, but mingled with them are a number of types of the northeastern states, others characteristic of the Ozark or southeastern mountain region, quite an element of southwestern species and some that are distinctly southern. That the central Mississippi Valley is the meeting ground of these various floras is well known, and Jasper County, through its diversity of soil and topography, fairly epitomizes, and is typical of, the region.

Catalogue of Species

POLYPODIACEAE

Notholaena dealbata (Pursh) Kunze. *640, 641, 642, 2992.*

Adiantum pedatum L. *634, 635, 636, 1319.*

Pteris aquilina, var. pseudocaudata Clute. *643, 644, 645.*

Cheilanthes lanosa (Michx.) Watt. *1321, 2376.*

Cheilanthes Feei Moore. *649, 650, 651, 1827, 2991.*

Pellaea atropurpurea (L.) Link. *637, 638, 639, 2985, 2989, 3085.*

Asplenium parvulum Mart. & Gal. *628, 629, 2993, 3168.*

Asplenium platyneuron (L.) Oakes. *631, 632, 758, 2481, 2019, 3152.*

Asplenium platyneuron, var. serratum (Miller) BSP. *2085.*

Camptosorus rhizophyllus (L.) Link. *625, 626, 1543.*

Polystichum acrostichoides (Michx.) Schott. *622, 623, 2961.*

Cystopteris bulbifera (L.) Bernh. *647, 2964, 2977, 3169.*

This species is sometimes difficult to distinguish from *Cystopteris fragilis,* as it seldom produces the characteristic fleshy bulblets in our area, and the fronds seldom exceed 20 cm. in length, but it differs from the next species in being broader at the base, thinner, and with segments less decurrent along the rachis. It is found along moist shaded ledges of limestone bluffs. *C. fragilis* seems to prefer rich banks and shaded hillsides.

Cystopteris fragilis (L.) Bernh. *646, 2327, 2978, 3018, 3255, 3388.*

Woodsia obtusa (Spreng.) Torr. *619, 620, 2216, 2328, 2480, 3059.*

Onoclea sensibilis L. *1320, 2111, 2976, 3156, 3697.*

OPHIOGLOSSACEAE

OPHIOGLOSSUM ENGELMANNI Prantl. *2044, 2942, 3358.*

Engelmann's adder's-tongue has been found in thin soil of limestone barrens near Carterville and in similar situations along North Fork of Spring River near Neck City. At the latter station several large colonies were growing.

BOTRYCHIUM VIRGINIANUM (L.) Sw. *616, 617, 618, 2030, 2947, 3154, 3698, 3359.*

BOTRYCHIUM OBLIQUUM Muhl. *3153.*

Rare and local. A few plants were found in rich hillside woods at a station along Center Creek, about four miles southeast of Carthage, September 11, 1910.

EQUISETACEAE

EQUISETUM ARVENSE L. *890, 2544.*

EQUISETUM HYEMALE L. *958.*

SELAGINELLACEAE

SELAGINELLA RUPESTRIS (L.) Spring. *1322.*

PINACEAE

JUNIPERUS VIRGINIANA L. *887, 1919.*

The red cedar is rare in our county. A number of small trees were noted on rocky uplands north of Spring River between Carthage and Alba; some large stumps were found along a bluff of North Fork between Jasper and Preston, but no living plants were left at this station. Young plants are occasionally found in woods throughout, the seeds probably having been carried by birds from planted trees.

TYPHACEAE

TYPHA LATIFOLIA L. *2306.*

SPARGANIACEAE

SPARGANUM AMERICANUM Nutt. *780, 3158, 3159.*

NAJADACEAE

POTAMOGETON OBTUSIFOLIUS Mertens & Koch. *3184.*

POTAMOGETON FOLIOSUS Raf. *3251.*

POTAMOGETON DIMORPHUS Raf. *1257, 2514, 3879.*

POTAMOGETON PECTINATUS L. *2204, 3251.*

ALISMACEAE

SAGITTARIA LATIFOLIA Willd. *460, 809, 1080.*

SAGITTARIA AMBIGUA J. G. Sm. *2130, 3061, 3727.*
SAGITTARIA GRAMINEA Michx. *3677.*
LOPHOTOCARPUS CALYCINUS (Engelm.) J. G. Sm. *471, 3748.*
ALISMA PLANTAGO-AQUATICA L. *343, 2183, 2783, 3786.*

HYDROCHARITACEAE

ELODEA CANADENSIS Michx. *3765.*

GRAMINEAE

TRIPSACUM DACTYLOIDES L. *1372, 3411, 3762.*
ANDROPOGON SCOPARIUS Michx. *220.*
ANDROPOGON VIRGINICUS L. *1007.*
ANDROPOGON ELLIOTTII Chapman. *2808.*
ANDROPOGON TERNARIUS Michx. *3268.*
ANDROPOGON FURCATUS Muhl. *678, 2591, 2838, 3080, 3143, 3183.*
ANDROPOGON CHRYSOCOMUS Nash. *217, 678.*
AMPHILOPHIS TORREYANUS (Steud.) Nash.
SORGHASTRUM NUTANS (L.) Nash. *279.*
SORGHUM HALEPENSE (L.) Pers. *997.*
SORGHUM VULGARE L. *637.*
DIGITARIA FILIFORMIS (L.) Koeler. *2810, 3116.*
DIGITARIA HUMIFUSA Pers. *2815.*
DIGITARIA SANGUINALIS (L.) Scop. *607, 3823.*
LEPTOLOMA COGNATUM (Schultes) Chase. *978, 1403, 3112.*
PASPALUM MUCRONATUM Muhl. *1389, 1490.*
PASPALUM DISSECTUM L. *968, 969, 1393, 3227, 3878.*
PASPALUM MUHLENBERGII Nash. *1117, 1390, 2341, 3066, 3161, 2289.*
PASPALUM LAEVE Michx. *1118.*
PASPALUM ANGUSTIFOLIUM LeConte. *777, 3067.*
PASPALUM PRAELONGUM Nash. *966, 1439, 3140, 3228.*
PASPALUM FLORIDANUM Michx. *1391, 1392, 3170.*
PASPALUM LAEVIGLUME Scribn. *967, 2334.*
PASPALUM GLABRATUM (Engelm.) Mohr. *965, 970.*
PANICUM CAPILLARE L. *227, 1402, 2550, 3090, 3096.*
PANICUM GATTINGERI Nash. *3204.*
PANICUM FLEXILE (Gattinger) Scribn. *786, 838, 843, 1119, 1400, 3089.*

Panicum philadelphicum Bernh. *815, 3115, 2447.*

Panicum dichotomiflorum Michx. *2647, 3119, 3225.*

Panicum virgatum L. *216, 975, 977, 992, 2439, 2533.*

Panicum agrostoides Spreng. *972, 1367, 3025, 3174.*

Panicum anceps Michx. *606, 764, 1406, 3048.*

Panicum depauperatum Muhl. *847, 1881, 1953.*

Panicum perlongum Nash. *594, 2156, 3372.*

Panicum linearifolium Scribn. *2236, 3382, 3354* (*1555* of *B. F. Bush*).

Panicum Werneri Scribn. *2426.*

Panicum huachucae Ashe. *749, 846, 2047, 2101, 3753.*

Panicum huachucae, var. silvicola Hitchc. & Chase. *1394, 1399, 2017, 3732, 3746, 3756.*

Panicum subvillosum Ashe. *3398, 3402.*

Panicum tennesseense Ashe. *596, 974, 3409, 3761, 3714.*

Panicum praecocius Hitchc. & Chase. *2144.*

Panicum sphaerocarpon Ell. *247, 850, 1398, 2154, 2507, 3808.*

Panicum Scribnerianum Nash. *223, 590, 2046, 2014, 2160, 2157, 3397, 3713.*

Panicum scoparium Lam. *611, 1401, 2293.*

Panicum clandestinum L. *971, 1404, 1395.*

Panicum pubifolium Nash. *1562.*

Panicum latifolium L. *597, 849, 1405, 740, 2106, 2966.*

Panicum Helleri Nash. *973, 1857.*

Panicum Lindheimeri Nash. *748, 1396, 2179, 2276, 3037.*

Echinochloa crusgalli (L.) Beauv. *246, 976, 2570, 3486, 3477.*

Setaria imberbis R. & S. *2438, 2471, 3050, 3422, 3034.*

Setaria glauca (L.) Beauv. *2347, 3071.*

Setaria viridis (L.) Beauv. *606, 3076.*

Setaria italica (L.) Beauv. *2551.*

Setaria italica, var. germanica (Mill.) Richter. *991.*

Cenchrus tribuloides L. *763.*

Leersia virginica Willd. *1000, 1561, 1381, 3207.*

Leersia oryzoides (L.) Sw. *1001, 1370, 1557, 2682.*

Phalaris caroliniana Walt. *221.*

Phalaris canariensis L. *3784.*

Stipa spartea Trin. *2159.*

Aristida dichotoma Michx. *1387, 1494, 3488.*
Aristida basiramea Engelm. *2854.*
Aristida gracilis Ell. *3217.*
Aristida intermedia Scribn. & Ball. *1121.*
Aristida oligantha Michx. *814, 1385, 2527.*
Aristida purpurascens Poir. *1002, 1386.*
Aristida fasciculata Torr. *4361.*
Muhlenbergia sobolifera (Muhl.) Trin. *856, 1375, 2529, 2546.*
Muhlenbergia tenuiflora (Willd.) BSP. *218, 2734.*
Muhlenbergia sylvatica Torr. *3187.*
Muhlenbergia mexicana (L.) Trin. *1388, 2686, 2797, 3463, 3467, 3475.*
Muhlenbergia Schreberi J. F. Gmel. *1376, 2646, 2984.*
Muhlenbergia diffusa Schreb. *988, 990, 3488.*
Muhlenbergia capillaris (Lam.) Trin. *2828.*
Brachyelytrum erectum (Schreb.) Beauv. *2459, 2545, 3196.*
Phleum pratense L. *995, 2127.*
Alopecurus geniculatus L. *225, 1826.*
Sporobolus canovirens Nash. *1005.*
Sporobolus asper (Michx.) Kunth. *2811, 3117, 3134, 3215, 3252, 3216.*
Sporobolus vaginiflorus (Torr.) Wood. *2796, 3118.*
Sporobolus neglectus Nash. *2843.*
Sporobolus pilosus Vasey. *987, 3133.*
Sporobolus Drummondii (Trin.) Vasey. *3479, 3485.*
Agrostis alba L. *860, 2223.*
Agrostis Elliottiana Schultes. *1377, 2941.*
Agrostis hyemalis (Walt.) BSP. *2288, 2517.*
Agrostis perennans (Walt.) Tuckerm. *835, 854, 979, 993, 2410, 3008, 3416.*
Agrostis intermedia Scribn. *3101.*
Cinna arundinacea L. *857, 998, 1368, 2492.*
Sphenopholis obtusata (Michx.) Scribn. *2444, 2987.*
Sphenopholis pallens (Spreng.) Scribn. *2948, 2962, 3363.*
Koeleria cristata (L.) Pers. *222, 2970.*
Danthonia spicata (L.) Beauv. *1364, 2224.*
Spartina Michauxiana Hitchc. *1369, 1495, 2573.*

Cynodon Dactylon (L.) Pers. *2450, 3501.*
Schedonnardus paniculatus (Nutt.) Trel. *2497.*
Gymnopogon ambiguus (Michx.) BSP. *1371, 1373, 2829.*
Bouteloua curtipendula (Michx.) Torr. *215, 2340, 2359, 2612.*
Eleusine indica Gaertn. *605.*
Leptochloa attenuata Nutt. *2577, 2733, 3094, 3911.*
Leptochloa mucronata (Michx.) Kunth. *2569.*
Leptochloa fascicularis (Lam.) Gray. *2509.*
Tridens strictus (Nutt.) Nash. *1374, 2627, 2812, 3065.*
Tridens flavus (L.) Hitchc. *2621, 3195.*
Eragrostis hypnoides (Lam.) BSP. *855, 1378, 1379.*
Eragrostis capillaris (L.) Nees. *231, 994, 1380, 2267, 2448, 2853, 2836, 3028, 3230.*
Eragrostis Frankii (Fisch, Mey. & Lall.) Steud. *2818.*
Eragrostis pilosa (L.) Beauv. *980, 2456, 2489, 3008.*
Eragrostis Purshii Schrad. *980, 3138, 3279.*
Eragrostis megastachya (Koeler) Link. *229, 600.*
Eragrostis pectinacea (Michx.) Steud. *842, 996, 1146, 2449, 2852.*
Melica mutica Walt. *861, 1809, 3769.*
Melica nitens Nutt. *859.*
Diarrhena diandra (Michx.) Wood. *3803.*
Uniola latifolia Michx. *226, 603, 1373.*
Dactylis glomerata L. *598.*
Poa annua L. *576, 986.*
Poa Chapmaniana Scribn. *554, 2911, 3369.*
Poa compressa L. *2451.*
Poa pratensis L. *985, 1383.*
Poa sylvestris Gray. *987, 1382, 1384, 1836.*
Poa Wolfii Scribn. *853, 3364.*
Glyceria nervata (Willd.) Trin. *2068, 2273, 3744, 3780.*
Festuca octoflora Walt. *224, 613, 1882, 3664, 2687.*
Festuca elatior L. *2369, 2408, 2495, 3077.*
Festuca nutans Spreng. *858, 999, 2240, 2322, 2413, 3656, 3693, 3384.*
Festuca Shortii Kunth. *2246, 2429, 2431, 2432.*

BROMUS SECALINUS L. *589.*
BROMUS PURGANS L. *1142, 1365, 1366, 2239.*
BROMUS COMMUTATUS Schrad. *3413, 3721.*
BROMUS ARVENSIS L. *2979.*
AGROPYRON SMITHII Rydb. *2590.*
AGROPYRON REPENS (L.) Beauv. *3418.*
TRITICUM VULGARE L. *2090.*
HORDEUM JUBATUM L. *2222.*
HORDEUM PUSILLUM Nutt. *984.*
ELYMUS VIRGINICUS L. *228, 2477, 3024.*
ELYMUS GLABRIFLORUS (Vasey) Scribn. & Ball. *983, 1143.*
ELYMUS CANADENSIS L. *588, 2333.*
ELYMUS GLAUCUS Buckley. *3045.*
ELYMUS BRACHYSTACHYS Scribn. & Ball. *982, 2453, 2534.*
HYSTRIX PATULA Moench. *612, 981, 3781.*

CYPERACEAE

CYPERUS RIVULARIS Kunth. *1047, 2754.*
CYPERUS ARISTATUS Rottb. *884, 2520, 3088, 3280.*
CYPERUS ACUMINATUS Torr. & Hook. *242, 2264, 3229.*
CYPERUS PSEUDOVEGATUS Steud. *234, 1048.*
CYPERUS ESCULENTUS L. *2482, 3141, 3447, 3476.*
CYPERUS ESCULENTUS, var. ANGUSTISPICATUS Boeckl. *2601.*
CYPERUS SPECIOSUS Vahl. *3224.*
CYPERUS STRIGOSUS L. *245, 3213, 3796, 3462.*
CYPERUS STRIGOSUS, var. ROBUSTIOR Kunth. *241, 3142.*
CYPERUS STRIGOSUS, var. COMPOSITUS Britton. *2712, 3245.*
CYPERUS STRIGOSUS, var. CAPITATUS Boeckl. *1049.*
CYPERUS LANCASTRIENSIS Porter. *1493, 2476, 2531.*
CYPERUS OVULARIS (Michx.) Torr. *232, 2366, 3794.*
CYPERUS FILICULMIS Vahl. *233, 2265, 3238.*
CYPERUS BUSHII Britton. *2946.*
KYLLINGA PUMILA Michx. *788, 3834.*
ELEOCHARIS OVATA (Roth) R. & S. *1362.*
ELEOCHARIS OBTUSA (Willd.) Schultes. *690, 1363, 3090, 3678, 3750.*
ELEOCHARIS ENGELMANNI Steud. *189, 1563, 3631, 3770.*

ELEOCHARIS PALUSTRIS (L.) R. & S. *3379, 2168, 2169, 3718.*

ELEOCHARIS PALUSTRIS, var. GLAUCESCENS (Willd.) Gray. *1817.*

ELEOCHARIS TENUIS (Willd.) Schultes. *765, 2013, 3444.*

ELEOCHARIS ACUMINATA (Muhl.) Nees. *3630.*

ELEOCHARIS LANCEOLATA Fernald. *2292.*

ELEOCHARIS MACROSTACHYA Britton. *2149, 2564.*

ELEOCHARIS ACICULARIS (L.) R. & S. *2587, 3421, 3426, 3719.*

STENOPHYLLUS CAPILLARIS (L.) Britton. *3029, 3265, 3278.*

STENOPHYLLUS CILIATIFOLIUS (L.) Mohr. *776, 1361, 3212.*

FIMBRISTYLIS CASTANEA, var. PUBERULA (Michx.) Britton. *595, 742, 1963, 2012, 2123, 2296, 3624.*

FIMBRISTYLIS LAXA Vahl. *1046, 3120, 3264.*

FIMBRISTYLIS AUTUMNALIS (L.) R. & S. *1360.*

SCIRPUS AMERICANUS Pers. *274, 677, 2496.*

This species of rush frequently grows about the mines, in wet "mineral sand," and in water pumped from mines which is strongly impregnated with iron sulphide and is fatal to many forms of plant life.

SCIRPUS VALIDUS Vahl. *608, 2167.*

SCIRPUS ATROVIRENS Muhl. *2128, 2202.*

SCIRPUS LINEATUS Michx. *593, 2091.*

SCIRPUS CARINATUS Gray. *3642.*

RYNCHOSPORA CYMOSA Ell. *2440, 2473, 3038, 3051.*

RYNCHOSPORA GLOMERATA (L.) Vahl. *1044, 1045, 2434, 3038a, 3056.*

SCLERIA TRIGLOMERATA Michx. *900, 2155, 2474.*

SCLERIA CILIATA Michx. *2472, 2471, 3033.*

CAREX SCOPARIA Schkuhr. *2291.*

CAREX TRIBULOIDES Wahlenb. *864, 2187, 3740, 3772.*

CAREX MIRABILIS Dewey. *3771.*

CAREX HORMATHODES Fernald. *3374.*

CAREX HORMATHODES, var. INVISA (W. Boott) Fernald. *3662.*

CAREX BICKNELLII Britton. *1958, 2284, 3674, 3716, 3724.*

CAREX FESTUCACEA Schkuhr. *555, 869, 874, 2150, 3370, 3582, 3653, 3760.*

CAREX ROSEA Schkuhr. *871.*

CAREX ROSEA, var. RADIATA Dewey. *3385, 3635, 3692.*

Carex retroflexa Muhl. *876, 1354, 1861, 3353.*
Carex austrina (Small) Mack. *1353, 2225, 3652, 3684, 3751.*
Carex arkansana Bailey. *3723.*
Carex cephalophora Muhl. *880, 3633.*
Carex Leavenworthii Dewey. *867, 872, 1358, 1778, 1851.*
Carex sparganioides Muhl. *1356, 3691.*
Carex vulpinoidea Michx. *1052, 2067, 2126, 3417.*
Carex conjuncta Boott. *877, 3696, 3787.*
Carex annectens Bicknell. *3759.*
Carex stipata Muhl. *873, 1962, 2174, 2442, 3679.*
Carex crus-corvi Shuttlw. *863, 2197.*
Carex Emoryi Dewey. *1910, 3706.*
Carex hirsuta Willd. *1593, 1865, 2078, 2206, 3720, 3675, 3807.*
Carex Bushii Mack. *3389, 878, 1865, 3676.*
Carex caroliniana Schwein. *2912, 3743.*
Carex aggregata Mack. *2207.*
Carex Davisii Schwein. & Torr. *1352, 1852, 3403, 3699.*
Carex Shortiana Dewey. *870, 2193, 3375, 3670.*
Carex umbellata Schkuhr. *238, 3589, 3625.*
Carex varia Muhl. *1357, 1666.*
Carex varia, var. colorata Bailey. *578, 3520, 3602.*
Carex Meadii Dewey. *239, 553, 1763, 3372, 3627, 3638.*
Carex ptychocarpa Steud. *2266.*
Carex laxiflora Lam. *599, 866, 868.*
Carex laxiflora, var. patulifolia (Dewey) Carey. *1880.*
Carex laxiflora, var. varians Bailey. *3366.*
Carex laxiflora, var. blanda (Dewey) Boott. *3694.*
Carex oligocarpa Schkuhr. *1953, 3364.*
Carex grisea Wahlenb. *882, 1050, 3700, 3773.*
Carex grisea, var. rigida Bailey. *1818.*
Carex lanuginosa Michx. *1874, 3741.*
Carex riparia W. Curtis. *1820, 1909, 2293.*
Carex squarrosa L. *875, 3403, 3735.*
Carex Frankii Kunth. *602, 1051, 2192.*
Carex lurida Wahlenb. *2135, 3054.*
Carex lupulina Muhl. *1050, 3017.*
Carex lupulina, var. pedunculata Dewey. *864, 2191, 2305, 3626, 3768.*

Carex Grayii, var. hispidula Gray. *604, 1359, 2023, 2196, 3739.*
Carex oklahomensis Mack. *3405.*

This species was described by Kenneth K. Mackenzie[1] giving reference to No. 3405 of this collection.

ARACEAE

Arisaema triphyllum (L.) Schott. *548, 687.*
Arisaema Dracontium (L.) Schott. *519.*
Acorus Calamus L. *1716, 2505.*

LEMNACEAE

Spirodela polyrhiza (L.) Schleid. *1247, 2200.*

COMMELINACEAE

Tradescantia brevicaulis Raf. *298.*

I have grown hybrids of this and the following species in my garden.

Tradescantia reflexa Raf. *299, 657, 1954, 3365.*

A form of this species with sheaths and leaves copiously hirsute has been found in rocky woods.

Tradescantia virginiana L. *1289.*
Commelina virginica L. *300, 2380.*
Commelina hirtella Vahl. *1092, 1288, 1485.*
Commelina nudiflora L. *1287, 1486.*
Commelina crispa Wooton. *2242.*
Commelina communis L. *2311.*

PONTEDERIACEAE

Pontederia cordata L. *1087.*
Heteranthera limosa (Sw.) Willd. *829, 2623.*

JUNCACEAE

Juncus tenuis Willd. *610, 750.*
Juncus interior Wiegand. *591, 2118, 2446.*
Juncus monostichus Bartlett. *2285.*
Juncus effusus L. *2283.*
Juncus polycephalus Michx. *2300, 3430.*
Juncus nodosus L. *609.*
Juncus Torreyi Coville. *601, 2504.*

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[1] Torreya 14:125–127. 1914.

Juncus brachycarpus Engelm. *237*, *2103*, *2119*, *2151*, *2212*, *2286*, *2299*, *2484*.

Juncus diffusissimus Buckley. *236*, *2211*, *3757*.

Juncus robustus (Engelm.) Coville. *2301*.

Juncus marginatus Rostk. *240*, *751*, *2275*.

Juncus marginatus, var. setosus Coville. *243*, *2122*.

Juncus aristulatus Michx. *1408*, *2117*, *2294*.

Luzula campestris, var. bulbosa A. Wood. *577*, *1407*, *1604*, *3644*.

LILIACEAE

Melanthium virginicum L. *2182*.

Allium canadense L. *521*, *2099*.

Allium mutabile Michx. *2114*, *2274*.

Allium sativum L. *2129*, *2503*.

Nothoscordum bivalve (L.) Britton. *294*.

Lilium canadense L. *2354*, *2891*.

Erythronium americanum Ker. *292*, *1623*.

Erythronium albidum Nutt. *1613*, *1617*.

Erythronium mesochoreum Knerr. *293*, *1596*, *1605*.

Camassia esculenta (Ker.) Robinson. *291*.

CONVALLARIACEAE

Smilacina racemosa (L.) Desf. *737*.

Smilacina stellata (L.) Desf. *556*, *736*.

Polygonatum commutatum (R. & S.) Dietr. *735*.

Trillium sessile L. *295*.

Asparagus officinalis L. *2312*.

Smilax herbacea L. *473*.

Smilax ecirrhata (Engelm.) Wats. *487*, *736*.

Smilax rotundifolia L. *55*, *735*, *892*.

Smilax Bona-nox L. *340*, *718*.

Plants apparently belonging to this species are not uncommon, but I have not collected it in fruit in the county.

Smilax hispida Muhl. *1074*, *3850*.

DIOSCOREACEAE

Dioscorea paniculata Michx. *527*.

Names and determinations of H. H. Bartlett[1] are followed for this species and succeeding variety.

DIOSCOREA PANICULATA, var. GLABRIFOLIA Bartlett. *832.*

AMARYLLIDACEAE

HYPOXIS HIRSUTA (L.) Coville. *694, 695.*

IRIDACEAE

IRIS VERSICOLOR L. *883, 2112.*
BELAMCANDA CHINENSIS (L.) DC. *1095.*
SISYRINCHIUM CAMPESTRE Bicknell. *119, 560, 686.*
SISYRINCHIUM GRAMINEUM Curtis. *120, 121, 122.*

ORCHIDACEAE

CYPRIPEDIUM PARVIFLORUM Salisb. *895, 1526, 1860.*
POGONIA TRIANTHOPHORA (Sw.) BSP. *3102.*
SPIRANTHES GRACILIS (Bigel.) Beck. *797, 3122.*
SPIRANTHES VERNALIS Engelm. & Gray. *408, 2566.*
SPIRANTHES CERNUA (L.) Richard. *337, 826, 1484, 3225, 3263.*
CORALLORRHIZA ODONTORHIZA Nutt. *1267, 1914.*
LIPARIS LILIIFOLIA (L.) Richard. *2171.*

PIPERACEAE

SAURURUS CERNUUS L. *793, 1131.*

SALICACEAE

SALIX NIGRA Marsh. *921, 2002.*
SALIX LONGIPIPES Anders. *917, 919.*
SALIX ALBA, var. VITELLINA (L.) Koch. *1246, 2606.*
SALIX LONGIFOLIA Muhl. *920.*
SALIX HUMILIS Marsh. *386, 918, 1611.*
SALIX CORDATA, var. MYRICOIDES (Muhl.) Carey. *1875, 2843.*
POPULUS ALBA L. *390.*
POPULUS DELTOIDES, var. MISSOURIENSIS Henry. *22, 2100, 3321, 3361, 3380, 3504, 3598.*
POPULUS NIGRA L. *1878.*

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[1] U. S. Dept. Agr., Bul. 189. 1910.

JUGLANDACEAE

JUGLANS NIGRA L. *960, 2071.*

CARYA PECAN C. K. Schneider. *1313.*

The pecan is not abundant in this section. Trees are found occasionally along Spring River and the lower part of Center Creek, near Carl Junction and Smithfield.

CARYA OVATA (Mill.) K. Koch. *456, 1314, 1904.*

CARYA ALBA (L.) K. Koch. *65, 1072.*

CARYA ALBA, var. FICOIDES Sarg. *3493.*

This variety of the mocker-nut, with large pear-shaped fruit, was described by Professor Sargent[1] from a tree growing in Mt. Hope Cemetery, Webb City. It has been noted in other parts of southwest Missouri.

CARYA OVALIS (Wang.) Sarg. *14, 25, 818, 1073, 1127, 2809, 3493.*

CARYA OVALIS, var. OBCORDATA Sarg.

CARYA CORDIFORMIS (Wang.) K. Koch. *26, 1126.*

CARYA CORDIFORMIS, var. LATIFOLIA Sarg.

CARYA LACINIOSA (Michx. f.) Loud. *4031.*

The large-fruited, shell-bark hickory is rare in our area, a few trees only having been noted along Spring River, a few miles west of Carthage.

CARYA ARKANSANA Sargent.

BETULACEAE

CORYLUS AMERICANA Walt. *891, 926.*

CORYLUS ROSTRATA Ait. *3455.*

OSTRYA VIRGINIANA (Mill.) K. Koch. *32, 380, 3522.*

BETULA NIGRA L. *925, 1544.*

FAGACEAE

QUERCUS ALBA L. *81, 705.*

QUERCUS STELLATA Wang. *25, 964, 2145.*

QUERCUS MACROCARPA Michx. *74, 1537.*

QUERCUS MUHLENBERGII Engelm. *26, 963, 1071, 1139, 3854.*

QUERCUS RUBRA L. *79.*

QUERCUS PALUSTRIS Muench. *901, 1275, 1514, 1901, 902.*

QUERCUS SCHNECKII Britton. *5, 78, 903, 962.*

QUERCUS VELUTINA Lam. *4, 27, 53, 1276.*

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[1] Trees and shrubs 2:206. 1913.

QUERCUS VELUTINA, var. MISSOURIENSIS Sarg. *1125.*
QUERCUS MARILANDICA Muench. *19, 24, 32, 704.*

ULMACEAE

ULMUS FULVA Michx. *90, 376, 3424.*
ULMUS AMERICANA L. *83, 379, 385, 1636, 3536.*
CELTIS OCCIDENTALIS L. *1130, 1538, 2675.*
CELTIS MISSISSIPPIENSIS Bosc. *47, 1279, 1280, 1277, 1551, 2082, 1278, 3659.*
CELTIS GEORGIANA Small. *1182, 1494, 875, 3489.*

MORACEAE

CANNABIS SATIVA L. *902.*
HUMULUS LUPULUS L. *410, 1258.*
HUMULUS JAPONICUS Sieb. & Zucc. *3799.*
MACLURA POMIFERA (Raf.) Schneider. *1129, 3303.*
MORUS RUBRA L. *54, 3355.*
MORUS ALBA L. *901.*
MORUS NIGRA L. *3729.*

URTICACEAE

LAPORTEA CANADENSIS (L.) Gaud. *468.*
PILEA PUMILA (L.) Gray. *339, 3256.*
BOEHMERIA CYLINDRICA (L.) Sw. *421, 830, 876, 3446.*
PARIETARIA PENNSYLVANICA Muhl. *346.*

SANTALACEAE

COMANDRA UMBELLATA (L.) Nutt. *582, 3607, 3626.*
COMANDRA PALLIDA A. DC. *2460, 3774.*

ARISTOLOCHIACEAE

ASARUM CANADENSE L. *693, 922.*
ARISTOLOCHIA TOMENTOSA Sims. *29, 948.*
ARISTOLOCHIA SERPENTARIA L. *1552, 1915, 1986, 2227, 2422, 2259.*

POLYGONACEAE

RUMEX CRISPUS L. *151, 152.*
RUMEX ALTISSIMUS Wood. *148, 149.*
RUMEX VERTICILLATUS L. *1282, 2314.*
RUMEX OBTUSIFOLIUS L. *153, 537, 2689.*
RUMEX ACETOSELLA L. *150, 1079.*

Polygonum aviculare L. *252, 447, 482.*
Polygonum erectum L. *894.*
Polygonum ramosissimum Michx. *441, 1540.*
Polygonum tenue Michx. *2775, 2847.*
Polygonum lapathifolium L. *250.*
Polygonum Muhlenbergii (Meisn.) Wats. *2335.*
Polygonum pennsylvanicum L. *249, 442, 443, 444, 3882.*
Polygonum longistylum Small. *1078.*
Polygonum Hydropiper L. *251.*
Polygonum acre HBK. *445.*
Polygonum acre, var. leptostachyum Meisn. *154, 2720.*
Polygonum orientale L. *2593.*
Polygonum Persicaria L. *155, 446.*
Polygonum hydropiperoides Michx. *464, 2287, 2332, 2438, 2779.*
Polygonum virginianum L. *156, 3210.*
Polygonum sagittatum L. *790, 3053, 3261.*
Polygonum convolvulus L. *248.*
Polygonum scandens L. *611.*

CHENOPODIACEAE

Cycloloma atriplicifolium (Spreng.) Coult. *3841.*
Chenopodium ambrosioides L. *812, 1043, 1549.*
Chenopodium anthelminticum L. *2923, 3442, 3846.*
Chenopodium hybridum L. *811, 3804, 3837.*
Chenopodium album L. *1040, 2041, 2357, 3838.*
Chenopodium Berlandieri Moq. *1042.*
Chenopodium murale L. *3106, 3419.*
Chenopodium Boscianum Moq. *787.*
Chenopodium leptophyllum Nutt. *1041.*
Chenopodium leptophyllum, var. oblongifolium S. Wats. *349.*

AMARANTHACEAE

Amaranthus retroflexus L. *427, 2624, 3114.*
Amaranthus hybridus L. *2827.*
Amaranthus graecizans L. *1038.*
Amaranthus blitoides S. Wats. *615.*
Amaranthus spinosus L. *345.*
Acnida tamariscina (Nutt.) Wood. *425, 1302, 1560.*
Iresine paniculata (L.) Ktze. *783, 1145, 1483.*

FROELICHIA GRACILIS Moq. *3227*.
SALSOLA KALI L.

PHYTOLACCACEAE

PHYTOLACCA DECANDRA L. *357*.

NYCTAGINACEAE

OXYBAPHUS NYCTAGINEUS (Michx.) Sweet. *436, 484, 3415*.
OXYBAPHUS FLORIBUNDUS Chois. *871, 1487, 3079*.
OXYBAPHUS ALBIDUS (Walt.) Sweet. *1096, 2761, 3135, 3651, 3480*.

ILLECEBRACEAE

ANYCHIA POLYGONOIDES Raf. *748, 1316, 1559*.
ANYCHIA CANADENSIS (L.) BSP. *423, 938*.

AIZOACEAE

MOLLUGO VERTICILLATA L. *341, 3886*.
GEOCARPON MINIMUM Mack. *3921, 5517*.

This interesting plant has so far been found only in one spot, in sandstone barrens on the high prairies, four miles north of Alba. In connection with his description of it[1] Mr. Kenneth K. Mackenzie says:

"This plant is probably to be referred to the family Aizoaceae, or as treated in the Synoptical Flora I: 256 the Ficoideae, and to the tribe Aizoideae of that family. In many respects it seems to come closer to the genus *Cypselea* than to any other North American genus. It differs markedly in the absence of stipules and style and in the capsule not being circumscissile. The other genera of the tribe in question, found in this country, are succulent plants with circumscissile capsules and cornute calyx-lobes.

"The tribe Mollugineae of the same family characterized by a calyx divided nearly or quite to the base, and represented in the United States by two genera having 3-celled ovaries, is less closely related to our plant. Nor can our plant be considered an apetalous representative of the Alsinaceae, as the sepals in that family are distinct or very nearly so. It seems in fact to represent a well-characterized genus."

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[1] Torreya 14:67. 1914.

CARYOPHYLLACEAE

SPERGULA ARVENSIS L. *3711.*
SAGINA DECUMBENS (Ell.) T. & G. *912.*
ARENARIA SERPYLLIFOLIA L. *1105.*
ARENARIA PATULA Michx. *506, 1245.*
STELLARIA MEDIA (L.) Cyrill. *504, 1752.*
CERASTIUM VULGATUM L. *562, 3634.*
CERASTIUM VISCOSUM L. *3272.*
CERASTIUM BRACHYPODUM (Engelm.) Robinson. *302, 568.*
CERASTIUM NUTANS Raf. *570, 1680, 3356.*
AGROSTEMMA GITHAGO L. *517, 2093.*
SILENE ANTIRRHINA L. *413, 749, 889.*
SILENE REGIA Sims. *278, 656.*
SILENE STELLATA (L.) Ait. f. *342.*
SILENE NOCTIFLORA L. *3974.*
SAPONARIA OFFICINALIS L. *435.*

PORTULACACEAE

CLAYTONIA VIRGINICA L. *365.*

A form of this plant growing in low rich woods has leaves much broader than in the prairie plants, sometimes 1.5 cm. broad.

TALINUM PARVIFLORUM Nutt. *2268.*
TALINUM CALYCINUM Engelm. *909, 2269.*
PORTULACA OLERACEA L. *820.*
PORTULACA NEGLECTA Mack. & Bush. *3108.*
PORTULACA PILOSA L. *908, 1412.*

CERATOPHYLLACEAE

CERATOPHYLLUM DEMERSUM L. *1438, 1815.*

NYMPHAEACEAE

NYMPHAEA ADVENA Ait. *888, 1917.*

RANUNCULACEAE

RANUNCULUS AQUATALIS, var. CAPILLACEUS DC. *2028, 2313, 2320, 3783.*
RANUNCULUS OBLONGIFOLIUS Ell. *1961, 1965, 2037, 3055.*
RANUNCULUS MICRANTHUS Nutt. *571, 1661, 1665.*
RANUNCULUS ABORTIVUS L. *543, 752, 3650.*

RANUNCULUS RECURVATUS Poir. *911, 1893, 3777.*
RANUNCULUS FASCICULARIS Muhl. *145, 1607.*
RANUNCULUS SEPTENTRIONALIS Poir. *913, 1634.*
RANUNCULUS HISPIDUS Michx. *912, 1894.*
MYOSURUS MINIMUS L. *1630, 1660, 3390.*
THALICTRUM DASYCARPUM Fisch. & Lall. *2030.*
THALICTRUM REVOLUTUM DC. *496, 2110.*
ANEMONELLA THALICTROIDES (L.) Spach. *143, 144.*
ANEMONE CAROLINIANA Walt. *141, 142, 1765.*
ANEMONE VIRGINIANA L. *491, 915.*
CLEMATIS PITCHERI T. & G. *697, 698, 1101, 2326.*
CLEMATIS MISSOURIENSIS Rydb. *3690.*
ISOPYRUM BITERNATUM (Raf.) T. & G. *1618, 1761.*
AQUILEGIA COCCINEA Small. *587.*
DELPHINIUM TRICORNE Michx. *147.*
DELPHINIUM PENARDI Huth. *146, 1864.*
CIMICIFUGA RACEMOSA (L.) Nutt. *869, 1102, 2325.*

ANONACEAE

ASIMINA TRILOBA Dunal. *31, 37, 813.*

MENISPERMACEAE

COCCULUS CAROLINUS (L.) DC. *614, 894, 2377, 3429.*
MENISPERMUM CANADENSE L. *143, 2054.*
CALYCOCARPUM LYONI (Pursh) Nutt. *735, 3236.*

BERBERIDACEAE

PODOPHYLLUM PELTATUM L. *692, 3601.*
CAULOPHYLLUM THALICTROIDES (L.) Michx. *3944.*

LAURACEAE

SASSAFRAS VARIIFOLIUM (Salisb.) Ktze. *8, 34, 709, 710.*
BENZOIN AESTIVALE (L.) Nees. *20, 35, 383, 344, 708.*

PAPAVERACEAE

SANGUINARIA DILLENIANA Greene. *1107, 1137, 1610.*

FUMARIACEAE

DICENTRA CUCULLARIA (L.) Bernh. *290, 1635.*
CORYDALIS FLAVULA (Raf.) DC. *289, 1616, 1676.*
CORYDALIS CRYSTALLINA Engelm. *288, 888, 3412.*

CORYDALIS AUREA Willd. *1625, 1678, 1702.*

CORYDALIS MONTANA Engelm. *1645, 1674.*

CRUCIFERAE

DRABA CAROLINIANA Walt. *282, 1600, 1608.*

DRABA CUNEIFOLIA Nutt. *1615, 1673.*

DRABA BRACHYCARPA Nutt. *285, 1609.*

LEPIDIUM VIRGINICUM L. *943.*

LEPIDIUM APETALUM Willd. *287, 2161.*

CAPSELLA BURSA-PASTORIS (L.) Medic. *283, 286, 1286, 3645.*

CAMELINA MICROCARPA Andrz. *2042.*

BRASSICA ALBA (L.) Boiss. *2553.*

BRASSICA ARVENSIS (L.) Ktze. *540, 2458.*

BRASSICA JAPONICA Siebold. *2346.*

BRASSICA NIGRA (L.) Koch. *2131.*

BRASSICA CAMPESTRIS L. (*6049* of *B. F. Bush*).

SISYMBRIUM OFFICINALE (L.) Scop. *459.*

RADICULA NASTURTIUM-AQUATICUM (L.) Britten & Rendle. *940, 3282.*

RADICULA SESSILIFLORA (Nutt.) Greene. *1911, 1980, 3250, 3301.*

RADICULA PALUSTRIS (L.) Moench. *525, 3009.*

RADICULA AQUATICA (Eat.) Robinson. *1285, 2184, 2486.*

BARBAREA VULGARIS R. Br. *1863.*

SELENIA AUREA Nutt. *942, 1603, 1799.*

IODANTHUS PINNATIFIDUS (Michx.) Steud. *405.*

DENTARIA LACINIATA Muhl. *284, 682, 1284, 1662, 3337.*

CARDAMINE BULBOSA (Schreb.) BSP. *1705, 1895.*

CARDAMINE ROTUNDIFOLIA Michx. *844.*

What appears to be this species has been found in a spring, near Spring River, four miles east of Carthage.

CARDAMINE PARVIFLORA L. *755, 3629.*

CARDAMINE ARENICOLA Britton. *508, 1709, 1824, 3672.*

CARDAMINE PENNSYLVANICA Muhl. *3615, 3657.*

ARABIS DENTATA T. & G. *573, 1749.*

ARABIS VIRGINICA (L.) Trel. *336, 757, 1283, 1599.*

ARABIS HIRSUTA (L.) Scop. *941, 2535, 2960, 3701.*

ARABIS LAEVIGATA (Muhl.) Poir. *486, 761.*

ARABIS CANADENSIS L. *497, 842, 3689.*

SOPHIA INTERMEDIA Rydb. *1149, 1629, 1640, 1732, 1804, 843, 841.*

SOPHIA PINNATA (Walt.) Britton. *1147, 1703, 1739, 3660.*

CAPPARIDACEAE

POLANISIA GRAVEOLENS Raf. *2773.*

CLEOME SPINOSA L. *870.*

CRASSULACEAE

PENTHORUM SEDOIDES L. *610, 784, 2721.*

SEDUM NUTTALLIANUM Raf. *872.*

SEDUM PULCHELLUM Michx. *350.*

SEDUM NEVII Gray. *3199, 3705.*

SAXIFRAGACEAE

HEUCHERA HIRSUTICAULIS (Wheelock) Rydb. *530, 1108, 2536, 3654.*

RIBES MISSOURIENSIS Nutt. *373, 575, 2009, 3596, 2373.*

PLATANACEAE

PLATANUS OCCIDENTALIS L. *23, 1841.*

ROSACEAE

OPULASTER INTERMEDIUS Rydb. *6, 10, 1455.*

GILLENIA STIPULATA (Muhl.) Trel. *351, 1091, 1132, 3754.*

PYRUS IOENSIS (Wood) Bailey. *105, 391, 1554, 3348, 3476, 3595.*

PYRUS IOENSIS, var. PALMERI Rehder. *2605, 3347, 3473.*

PYRUS MALUS L. *467, 1722.*

AMELANCHIER CANADENSIS (L.) Medic. *2, 27, 955, 1603, 3658, 1269, 1555.*

CRATAEGUS STRONGYLOPHYLLA Sarg. *1968, 1973, 1983, 2752, 2759, 2786.*

CRATAEGUS TANTULA Sarg.

CRATAEGUS FEROX Sarg. *905, 916, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1870, 1984.*

CRATAEGUS PALMERI Sarg. *1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 3617.*

CRATAEGUS ROTUNDA Sarg. *1294, 1295, 1296, 1297, 1298, 1299, 1300, 1472, 1979.*

CRATAEGUS PARCIFLORA Sarg. *1292, 1293.*

CRATAEGUS JASPERENSIS Sarg. *1290, 1291, 1578, 1579, 2758, 2869, 2881, 1886.*

CRATAEGUS RUBRISEPALA Sarg. *1284, 1285, 1301, 2700.*

CRATAEGUS MUNITA Sarg. *1468, 2006, 2728.*

CRATAEGUS PARADOXA Sarg. *1899, 1977, 1930, 1933, 1978, 2762, 2763, 2770, 2771, 2772.*

CRATAEGUS RUBRIFOLIA Sarg. *1286, 1287, 1288, 1289, 1301, 1464, 1887, 1971, 2868.*

CRATAEGUS VICINA Sarg. *1232, 1263, 1265, 1266, 1230, 1231, 1264, 1463, 1786, 2886, 2887, 2888, 2889, 2890.*

CRATAEGUS MACROPODA Sarg. *1227, 1228, 1229, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 2736.*

CRATAEGUS SECTA Sarg. *1225, 1226, 1255, 1256, 1467, 1728, 1731, 2656, 2658, 2838.*

CRATAEGUS FURCATA Sarg. *1233, 1234, 1267, 1268, 1270, 1271, 1272, 1832, 1869, 2884.*

CRATAEGUS LUTENSIS Sarg. *2883.*

CRATAEGUS OVATA Sarg. *1959.*

CRATAEGUS BRACTEATA Sarg. *1253, 1254, 1274, 1828, 1842, 1885, 1876, 1469, 1474, 2603, 2755.*

CRATAEGUS ASPERA Sarg. *1245, 1246, 1839, 2755, 2757.*

CRATAEGUS DISJUNCTA Sarg.

CRATAEGUS MAGNIFOLIA Sarg. *1247, 1248, 1249, 1250, 1251, 1252, 1469, 1831, 1648, 1867, 1872, 1890, 2799, 2800.*

CRATAEGUS LASIANTHA Sarg. *1242, 1273, 1283, 1473, 1744, 2671, 2772, 2794, 2707, 1757.*

CRATAEGUS DUMETOSA Sarg. *1462, 1470, 1692.*

CRATAEGUS MOLLIS (T. & G.) Scheele. *1282, 1700, 1746, 1748, 2715.*

CRATAEGUS LANUGINOSA Sarg. *1235, 1237, 1238, 1239, 1240, 1241, 1243, 1273, 1811, 1814, 1843, 1782, 3618.*

CRATAEGUS DASYPHYLLA Sarg. *1712, 1768.*

CRATAEGUS SPECIOSA Sarg. *1219, 1220, 1221, 1222, 1223, 1224, 1243, 1244, 1777, 1780, 1801, 1807, 2650, 2738, 2740, 2858, 2862, 2873, 2874, 2875, 2876, 2973.*

CRATAEGUS HISPIDULA Sarg. *1276, 1277, 1465, 1471, 2032, 2084, 2744, 2073, 2709.*

CRATAEGUS OBSCURA Sarg. *1271, 1278, 1279, 2031, 2052, 2069, 2072, 2619, 2632, 2711, 3858.*

CRATAEGUS SPINULOSA Sarg. *1280, 1281, 2020, 2035, 2691, 2705, 2748, 3496.*

CRATAEGUS INSPERATA Sarg. *1274, 1275, 1466, 2039, 2063, 2064, 2777, 2863.*

CRATAEGUS MOLLICULA Sarg. *2036, 2037, 2055, 2749.*

CRATAEGUS SIMULATA Sarg. *1999, 2000, 2001, 2019, 2034, 2690, 2743, 2745.*

CRATAEGUS SPATHULATA, var. FLAVANTHA Sarg. *1994, 2856, 2870, 2871.*

Only one tree of this species has been found in a thicket near Joplin. This is the most northerly station recorded for this southern red haw, which is very common in some of the gulf states.

FRAGARIA VIRGINIANA Duch. *308.*

FRAGARIA VIRGINIANA, var. ILLINOENSIS (Prince) Gray. *1272.*

POTENTILLA MONSPELIENSIS L. *736, 803, 1985, 2113, 2411, 3758.*

POTENTILLA CANADENSIS L. *307, 907, 2479.*

A slender form found in the northwestern part of the county, with long filiform runners and under surface of leaves somewhat silvery, may be distinct.

GEUM CANADENSE Jacq. *497, 2190, 2414.*

GEUM VERNUM (Raf.) T. & G. *352, 544, 3368.*

RUBUS OCCIDENTALIS L. *740, 3454, 3497.*

RUBUS ALLEGHENIENSIS Porter. *1270.*

RUBUS ANDREWSIANUS Blanchard. *99, 2075, 3432, 3453.*

RUBUS PROCUMBENS Muhl. *305, 475, 1271, 2229, 2234, 3422, 3435.*

RUBUS RUBRISETUS Rydb. *1594.*

AGRIMONIA STRIATA Michx. *3126.*

AGRIMONIA MOLLIS (T. & G.) Britton. *306.*

AGRIMONIA PARVIFLORA Ait. *609, 1323.*

ROSA SETIGERA Michx. *33, 819, 2221, 2290.*

ROSA HELIOPHILA Greene. *50, 961, 2057, 2066, 2077, 2098, 2105, 2137, 2228.*

ROSA WOODSII Lindl. *2051, 2132, 2840, 3406, 3438, 3440.*

ROSA RUBIGINOSA L. *3187.*

ROSA HUMILIS Marsh. *98, 1274, 3775.*

ROSA RUDIUSCULA Greene. *3715, 3749.*

PRUNUS SEROTINA Ehrh. *12, 954, 3377.*

PRUNUS ANGUSTIFOLIA Marsh. *2824, 3309.*

PRUNUS MUNSONIANA Wight. & Hedrick. *3100, 3310, 3318, 3334, 3023, 3098.*

PRUNUS MAHALEB L. *3149, 3378.*

PRUNUS PALMERI Sarg. *1677, 2233, 3525, 3904.*

PRUNUS HORTULANA Bailey. *44, 821, 822, 823, 958, 825, 3328, 3340, 3586.*

PRUNUS HORTULANA, var. PUBENS Sarg. *2164, 2893, 2897, 3045, 3073, 2901.*

PRUNUS PERSICA (L.) Stokes. *2419.*

PRUNUS LANATA (Sudw.) Mack. & Bush. *45.*

To this species are doubtfully referred plums of the Americana group, common on prairies and in thickets and open woods. It is usually a shrub suckering freely and forming small thickets, producing small red acid fruit with a glaucous bloom. Occasionally it becomes a tree of considerable size. The true position of the species is still unsettled.

LEGUMINOSAE

DESMANTHUS ILLINOENSIS (Michx.) MacM. *431.*

SCHRANKIA UNCINATA Willd. *531, 3457.*

GYMNOCLADUS DIOICA (L.) Koch. *3, 3755.*

GLEDITSIA TRIACANTHOS L. *59, 729, 1541, 2186.*

CASSIA MEDSGERI Shafer. *126, 3441.*

CASSIA CHAMAECRISTA L. *124, 2643.*

CASSIA NICTITANS L. *123, 3164, 3471.*

CERCIS CANADENSIS L. *49, 387.*

BAPTISIA BRACTEATA (Muhl.) Ell. *128.*

BAPTISIA LEUCANTHA T. & G. *568, 2464.*

BAPTISIA AUSTRALIS (L.) R. Br. *127.*

CROTALARIA SAGITTALIS L. *440, 840.*

TRIFOLIUM ARVENSE L. *3785.*

TRIFOLIUM PRATENSE L. *686.*

TRIFOLIUM REFLEXUM L. *500, 551, 1967, 3968.*

TRIFOLIUM STOLONIFERUM Muhl. *3967.*

TRIFOLIUM REPENS L. *1064.*

TRIFOLIUM HYBRIDUM L. *1067, 2058.*

TRIFOLIUM CAROLINIANUM Michx. *1789, 2058.*

Trifolium procumbens L. *1065, 3040.*
Melilotus officinalis (L.) Lam.
Melilotus alba Desr. *492, 2230.*
Medicago sativa L. *2304.*
Hosackia americana (Nutt.) Piper. *595, 2597, 2968, 3877.*
Psoralea pedunculata (Mill.) Vail. *138.*
Psoralea tenuiflora Pursh. *139, 3367.*
Amorpha canescens Pursh. *20, 77.*
Amorpha fruticosa L. *15, 830.*
Petalostemum purpureum (Vent.) Rydb. *2983, 3487.*
Petalostemum purpureum, var. pubescens Gray. *202.*
Petalostemum candidum Michx. *201, 1066, 3466.*
Tephrosia virginiana (L.) Pers. *147, 2308, 3125.*
Robinia Pseudo-Acacia L. *886.*
Astragalus caryocarpus Ker. *399, 1290.*
Astragalus mexicanus A. DC. *3332.*
Astragalus canadensis L. *885.*
Astragalus distortus T. & G. *588, 1704, 1798, 1829, 1932, 1956.*
Desmodium nudiflorum (L.) DC. *2350, 2542, 2594.*
Desmodium grandiflorum (Walt.) DC. *129, 367, 2898.*
Desmodium pauciflorum (Nutt.) DC. *2585, 2595.*
Desmodium rotundifolium (Michx.) DC. *3059, 3121, 3160.*
Desmodium canescens (L.) DC. *419, 1067, 1068, 2539, 2589, 2615, 2697, 2687, 2696.*
Desmodium bracteosum (Michx.) DC. *2695, 3204.*
Desmodium illinoense Gray. *463, 2280.*
Desmodium Dillenii Darl. *765, 2676, 2678, 2694, 2751.*
Desmodium paniculatum, var. pubens T. & G. *2641, 2680, 2704.*
Desmodium canadense (L.) DC. *2572.*
Desmodium sessilifolium (Torr.) T. & G. *2582, 2681, 2760.*
Desmodium marilandicum (L.) DC. *891, 2679, 2774.*
Lespedeza repens (L.) Bart. *887.*
Lespedeza violacea (L.) Pers. *7, 135, 3205, 3469.*
Lespedeza prairea (Mack. & Bush) Britton. *890, 3848.*
Lespedeza Stuvei Nutt. *1062, 1063, 2826, 3468.*
Lespedeza virginica (L.) Britton. *133, 134, 771, 889, 3867.*
Lespedeza hirta (L.) Hornem. *888.*
Lespedeza capitata Michx. *3464, 3847.*

Lespedeza capitata, var. sericea H. & A. *140, 3458.*
Lespedeza striata (Thunb.) H. & A. *600.*
Stylosanthes biflora (L.) BSP. *131, 132, 461, 2253.*
Vicia villosa Roth. *2281.*
Lathyrus pusillus Ell. *2004.*
Apios tuberosa Moench. *3022.*
Phaseolus polystachyus (L.) BSP. *3218.*
Strophostyles helvola (L.) Britton. *778, 3876.*
Strophostyles umbellata (Muhl.) Britton. *892.*
Strophostyles pauciflora (Benth.) Wats. *817, 2522, 3070.*
Amphicarpa monoica (L.) Ell. *773.*
Amphicarpa Pitcheri T. & G. *3051, 3194.*
Galactia volubilis (L.) Britton. *436.*
Galactia volubilis, var. mississippiensis Vail. *2833.*

LINACEAE

Linum usitatissimum L. *899, 2543.*
Linum sulcatum Riddell. *264*
Linum medium (Planch.) Britton. *898, 1534, 2220, 2261.*

OXALIDACEAE

Oxalis violacea L. *259.*
Oxalis stricta L. *1106, 2049.*
Oxalis corniculata L. *260, 2965.*
Oxalis repens Thunb. *681, 1558.*
Oxalis interior Small. *433, 792, 877, 2556.*

GERANIACEAE

Geranium maculatum L. *680, 756.*
Geranium carolinianum L. *268, 2088.*

RUTACEAE

Zanthoxylum americanum Mill. *64, 392, 718, 3529.*
Ptelea trifoliata L. *24, 389, 707, 1516, 2263, 3801.*

SIMARUBACEAE

Ailanthus glandulosa Desf.

POLYGALACEAE

Polygala incarnata L. *187, 2294, 2435.*
Polygala sanguinea L. *188, 358, 2138, 2218, 2277.*
Polygala verticillata L. *823, 2367, 3763.*

EUPHORBIACEAE

Croton glandulosus L. *451, 1539.*

Croton capitatus Michx. *169, 170.*

Croton monanthogynus Michx. *166, 167.*

Crotonopsis linearis Michx. *612, 927, 1317, 3240.*

Acalypha virginica L. *791.*

Acalypha gracilens Gray. *364, 438.*

Tragia nepetaefolia Cav. *1111, 2986, 453.*

Tragia ramosa Torr. *160.*

This species of the stinging spurge appears to be quite distinct from *T. nepetaefolia* in the floral characters and in the stiff erect habit of growth. The latter is usually a more or less twining vine, sometimes 5 m. high or more.

Phyllanthus caroliniensis Walt. *449, 1281, 3283.*

Euphorbia Preslii Guss. *163, 397, 448, 813, 2719.*

Euphorbia maculata L. *450, 452, 926, 2718.*

Euphorbia marginata Pursh. *3072, 3127.*

Euphorbia corollata L. *158, 164, 165.*

Euphorbia dentata Michx. *168, 834, 2374.*

Euphorbia heterophylla L. *161, 162, 3123, 3219.*

Euphorbia missouriensis (Norton) Small. *1922, 2139.*

CALLITRICHACEAE

Callitriche heterophylla Pursh. *886, 1614, 1658, 1816, 3731.*

Callitriche deflexa, var. Austini (Engelm.) Hegelm. *1908, 3015, 3728, 3681.*

ANACARDIACEAE

Rhus glabra L. *75, 1128.*

Rhus copallina L. *15, 959.*

Rhus Toxicodendron L. *52, 1517, 1903, 2135.*

Rhus canadensis Marsh. *7, 1866.*

Rhus trilobata Nutt. *706, 873, 1109, 1900, 1805.*

This shrub, commonly known as polecat bush, is quite distinct from *Rhus canadensis.* It is usually found on dry limestone ledges or rocky bluffs and is a stout shrub 1 to 1.5 m. high, with stems sometimes 4 or 5 cm. in diameter. It flowers much later than *R. canadensis,* the leaves being more than half grown at the time of blooming. *R. canadensis,* a slender shrub, is one of the earliest flowering plants of spring.

AQUIFOLIACEAE

ILEX DECIDUA Walt. *1309, 1310, 1326, 1822.*

CELASTRACEAE

EVONYMUS ATROPURPUREUS Jacq. *46, 1518.*
CELASTRUS SCANDENS L. *77, 712.*

STAPHYLEACEAE

STAPHYLEA TRIFOLIA L. *66, 817, 818, 3531.*

ACERACEAE

ACER SACCHARUM Marsh. *31, 384, 3671, 3532.*
ACER SACCHARINUM L. *21, 377, 381.*
NEGUNDO ACEROIDES Moench. *11, 382, 923, 1686, 3519.*

The box elders differ much in foliage and to some extent in the fruit. There are two rather distinct forms in our region: one with glabrous twigs and leaves is the true *Acer Negundo* or *Negundo Negundo,* to adopt the more recent name; the form with broad rugose pubescent leaflets is *N. texanum* of Rydberg. The fruit in both these species is somewhat constricted into a stipe-like base. A third form with pubescent leaves and fruit not so constricted has been distinguished as *N. interius* Rydberg.

SAPINDACEAE

SAPINDUS DRUMMONDI H. & A. *3984, 4020.*

The most northerly station recorded for this tree, popularly called soapberry or wild chinaberry, is along a small creek near Careytown, in the northern part of our county. It has been found at two other stations in the county, both of them on Center Creek. It grows along dry limestone bluffs having a southern exposure. There are not many plants at either of these colonies and it is not unlikely that it may become extinct in our area.

AESCULUS GLABRA Willd. *1681, 1685, 1758, 3530.*

BALSAMINACEAE

IMPATIENS PALLIDA Nutt. *361.*
IMPATIENS BIFLORA Walt. *467.*

RHAMNACEAE

RHAMNUS LANCEOLATA Pursh. *56, 70.*

CEANOTHUS AMERICANUS L. *40, 813.*
CEANOTHUS OVATUS, var. PUBESCENS T. & G. *395, 2258.*

VITACEAE

PSEDERA QUINQUEFOLIA (L.) Greene. *1265, 3842.*
PSEDERA QUINQUEFOLIA, var. HIRSUTA (Donn) Rehder. *1264.*
PSEDERA QUINQUEFOLIA, var. SAINT-PAULII (Koehne & Grabner) Rehder. *80, 1496.*
CISSUS AMPELOPSIS Pers. *67, 1589, 4002.*
VITIS CINEREA Engelm. *458, 2045, 2185, 2249, 2499.*
VITIS BICOLOR Le Conte. *2822.*
VITIS CORDIFOLIA Michx. *53, 67, 897, 3966.*
VITIS LINSECOMII Buckley. *58, 1318, 2104, 2461, 2462, 2661, 3992.*
VITIS LINSECOMII, var. GLAUCA Munson. *2209, 2244, 2245, 2475, 4028.*

MALVACEAE

ABUTILON THEOPHRASTI Medic. *915, 2561.*
MALVASTRUM ANGUSTUM Gray. *437, 1547.*
SIDA SPINOSA L. *596, 2470.*
MALVA ROTUNDIFOLIA L. *882.*
CALLIRHOE DIGITATA Nutt. *348, 3420.*
HIBISCUS SYRIACUS L. *3460.*
HIBISCUS INCANUS Wendland. *1089, 1306, 1548.*
HIBISCUS MILITARIS Cav. *802, 1305.*
HIBISCUS TRIONUM L. *839, 2600, 3450.*

HYPERICACEAE

ASCYRUM HYPERICOIDES L. *538, 1670.*
HYPERICUM PUNCTATUM Lam. *2383, 2412.*
HYPERICUM PSEUDOMACULATUM Bush. *2971.*
HYPERICUM PROLIFICUM L. *1263, 1902, 3012.*
HYPERICUM CISTIFOLIUM Lam. *174, 175, 896.*
HYPERICUM MUTILUM L. *177, 1097.*
HYPERICUM DRUMMONDII (Grev. & Hook.) T. & G. *262, 880, 1103, 3226, 3241.*

CISTACEAE

HELIANTHEMUM MAJUS BSP. *523.*

LECHEA VILLOSA Ell. *796, 900, 1315.*
LECHEA TENUIFOLIA Michx. *266, 836.*

VIOLACEAE

HYBANTHUS CONCOLOR (Forster) Spreng. *884, 1683, 1835, 3172.*
VIOLA PEDATA, var. LINEARILOBA DC.
VIOLA MISSOURIENSIS Greene. *1663, 1675, 1707, 1905, 2022, 3404, 3738.*
VIOLA PAPILIONACEA Pursh. *1639, 1686, 1957, 3267.*
VIOLA PALMATA, var. DILATATA Ell. *1951.*
VIOLA TRILOBA Schwein. *1665, 1715, 3041, 3333, 3351, 3666, 3688, 3552, 3703.*
VIOLA SORORIA Willd. *845, 1110, 272, 1626, 1633, 1716, 846, 847, 1687, 2089, 3335.*
VIOLA FIMBRIATULA Sm. *3343, 3376.*
VIOLA SAGITTATA Ait. *1638, 1897, 3391, 3399, 3588, 3605, 3717.*
VIOLA EMARGINATA Le Conte. *760, 1766, 3066, 3587, 3717.*
VIOLA PEDATIFIDA G. Don. *561, 1644, 1764, 3346.*
VIOLA SCABRIUSCULA Schwein. *271, 574, 1706, 1713, 1714, 737.*
VIOLA VIARUM Pollard. *1687.*
VIOLA RAFINESQUII Greene. *673, 674, 1929.*
VIOLA PAPILIONACEA × TRILOBA. *2256, 3357, 3360, 3603, 3665,*
VIOLA PAPILIONACEA × PEDATIFIDA. *3331, 3345, 3393, 3425, 3593, 3912.*
VIOLA SORORIA × TRILOBA. *565.*
VIOLA EMARGINATA × SORORIA. *1260, 3395.*

PASSIFLORACEAE

PASSIFLORA LUTEA L. *141, 879, 2427.*
PASSIFLORA INCARNATA L. *6371.*

LOASACEAE

MENTZELIA OLIGOSPERMA Nutt. *1099, 2356, 3004.*

CACTACEAE

OPUNTIA HUMIFUSA Raf. *2142.*
OPUNTIA MACRORHIZA ? Engelm. *2278.*

LYTHRACEAE

DIDIPLIS DIANDRA (Nutt.) Wood. *1254, 3844.*
ROTALA RAMOSIOR (L.) Koehne. *800, 1476, 2419, 2626, 3246, 3821.*

Ammannia coccinea Rottb. *2575, 4007.*
Ammannia auriculata Willd. *1104, 3248, 3822.*
Lythrum alatum Pursh. *267, 2337.*
Cuphea petiolata (L.) Koehne. *279, 2337.*

MELASTOMACEAE

Rhexia latifolia Bush. *923, 949, 1256, 1907, 2433, 3049.*

ONAGRACEAE

Jussiaea diffusa Forsk. *910, 914, 2639.*
Ludvigia alternifolia L. *176, 801, 1243.*
Ludvigia palustris (L.) Ell. *1297, 2429, 3273, 3281, 3806.*
Oenothera muricata L. *416, 780.*
Oenothera muricata, var. canescens (T. & G.) Robinson. *2571.*
Oenothera biennis L. *807.*
Oenothera laciniata Hill. *301, 3649, 3746.*
Oenothera laciniata, var. grandiflora (Wats.) Robinson. *550.*
Oenothera speciosa Nutt. *480, 2083.*
Oenothera linifolia Nutt. *263, 2121, 3682.*
Gaura biennis L. *112.*
Gaura Pitcheri (T. & G.) Small. *102, 2549, 2640, 2660, 3113, 3147.*
Gaura parviflora Dougl. *2494, 2591.*
Circaea lutetiana L. *469, 881.*

HALORAGIDACEAE

Myriophyllum scabratum Michx. *3242.*
Myriophyllum proserpinacoides Gill. *743, 3275.*
Established in a pond four miles northwest of Joplin.
Proserpinaca palustris L. *3257.*

UMBELLIFERAE

Eryngium yuccifolium Michx. *359, 1080.*
Sanicula gregaria Bicknell. *368.*
Sanicula canadensis L. *2133, 2343.*
Erigenia bulbosa (Michx.) Nutt. *684, 759, 1598.*
Chaerophyllum procumbens (L.) Crantz. *335, 572, 1619, 1812,* (*1559* of *B. F. Bush*).
Chaerophyllum texanum Coult. & Rose. *494, 1081, 2331.*

OSMORHIZA CLAYTONI (Michx.) Clarke. *1892.*
OSMORHIZA LONGISTYLIS (Torr.) DC. *683, 1262.*
SPERMOLEPIS PATENS (Nutt.) Robinson. *476, 530, 2310, 2345.*
SPERMOLEPIS ECHINATA (Nutt.) Heller. *2361.*
PTILIMNIUM NUTTALLII (DC.) Britton. *137, 2490.*
CICUTA MACULATA L. *172, 2491, 2557.*
CRYPTOTAENIA CANADENSIS (L.) DC. *490, 2134.*
ZIZIA AUREA (L.) Koch. *511, 1719.*
ZIZIA CORDATA (Walt.) DC. *1988.*
TAENIDIA INTEGERRIMA (L.) Drude. *171, 2087.*
EULOPHUS AMERICANUS Nutt. *489, 2210.*
CONIUM MACULATUM Michx. *3707, 3997.*
THASPIUM BARBINODE (Michx.) Nutt. *533, 1808, 2417.*
POLYTAENIA NUTTALLII DC. *583, 685.*
PASTINACA SATIVA L. *2092.*
HERACLEUM LANATUM Michx. *1825, 2029.*
TORILIS ANTHRISCUS (L.) Bernh. *2221, 2384, 3977.*
DAUCUS CAROTA L. *2371, 3191.*
DAUCUS PUSILLUS Michx. *539, 2270.*

CORNACEAE

CORNUS FLORIDA L. *63, 89, 814, 815, 816, 3632.*
CORNUS AMOMUM Mill. *60, 375.*
CORNUS ASPERIFOLIA Michx. *57, 817, 1307, 2975, 2201.*
CORNUS BAILEYI Coult. & Evans. *1308, 2418.*

ERICACEAE

MONOTROPA UNIFLORA L. *3155, 3254.*

The curious and delicate Indian pipe or ghost plant has been found growing up through the humus in deep oak woods at several places in the county.

MONOTROPA HYPOPITYS L. *2352.*

This species, known as pine sap, appears to be a great rarity, only a few plants having been found, June 27, 1909, on gravelly banks, growing with "reindeer moss," near Scotland Spring.

VACCINIUM ARBOREUM Marsh.

The tree huckleberry and the next species, the low bush huckleberry, barely get into our county in the southwestern part. They are both abundant in the rocky woods bordering Shoal Creek, a little farther south in Newton County.

Vaccinium tenellum Ait. *2501.*

PRIMULACEAE

Androsace occidentalis Pursh. *545, 696, 3584.*
Samolus floribundus HBK. *1251, 2243, 2537, 2781.*
Steironema ciliatum (L.) Raf. *30, 738, 1090.*
Steironema lanceolatum (Walt.) Gray. *3887.*
Dodecatheon Meadia L. *585, 919, 920, 1726, 2702.*
Centunculus minimus L. *3733.*

SAPOTACEAE

Bumelia lanuginosa (Michx.) Pers. *28, 927, 2655.*

EBENACEAE

Diospyros virginiana L. *62, 3974.*

There is much variation in the fruit and foliage of the persimmon. The common variety sometimes becomes a tree 10 or 12 m. high, forming small groves or thickets on upland prairies. The fruit is scarcely edible until after the first frosts. A not uncommon form, growing in similar situations, has large pubescent leaves with cordate bases which turn a bright yellow in autumn. Small trees producing very large soft pulpy fruit ripening early in September may belong to a distinct species.

OLEACEAE

Fraxinus americana L. *924, 1542, 3533, 3636, 3667.*
Fraxinus lanceolata Borkh. *12, 117, 1513, 1776.*
Fraxinus quadrangulata Michx. *1124, 1515, 2080.*
Adelia acuminata Michx. *1249, 1627, 2074, 2188.*

APOCYNACEAE

Amsonia salicifolia Pursh. *296. 2488.*

This species grows usually along gravelly branches, in large frutescent clumps 1 m. or more high. The leaves are narrower and the flowers smaller than in the next species, from which it appears quite distinct.

Amsonia Tabernaemontana Walt. *921, 1819.*
Apocynum cannabinum L. *208, 1093, 1094, 3188.*

Apocynum pubescens R. Br. *2336, 3426.*
Apocynum leuconeuron Greene. *3979, 4006.*
Apocynum androsaemifolium L. *2172.*

GENTIANACEAE

Sabatia angularis (L.) Pursh. *405, 2506.*
Sabatia campestris Nutt. *363, 569, 2512.*
Gentiana puberula Michx. *344, 691, 3269.*
Gentiana Andrewsii Griseb. *1410, 1519, 3235, 3884.*
Gentiana flavida Gray. *1592, 3128.*

ASCLEPIADACEAE

Asclepiodora viridis (Walt.) Gray. *207.*
Asclepias tuberosa L. *211, 2820.*
Asclepias purpurascens L. *213, 2235.*
Asclepias incarnata L. *2, 1536.*
Asclepias kansana Vail. *929.*
Asclepias amplexicaulis J. E. Smith. *492, 946, 3035, 3734.*
Asclepias quadrifolia Jacq. *214, 3695.*
Asclepias verticillata L. *210, 819.*
Asclepias stenophylla Gray. *2309.*
Acerates floridana (Lam.) Hitchc. *209, 911.*
Acerates viridiflora Ell. *1113.*
Acerates viridiflora, var. Ivesii Britton. *212.*
Gonolobus laevis Michx. *824, 1794, 3810.*
Vincetoxicum carolinense (Jacq.) Britton. *206, 3956.*
Vincetoxicum Baldwinianum (Sweet) Britton. *2416.*

CONVOLVULACEAE

Ipomoea coccinea L. *402, 1293.*
Ipomoea hederacea Jacq. *822, 3855.*
Ipomoea purpurea (L.) Roth. *401, 821.*
Ipomoea pandurata (L.) Meyer. *415, 1295.*
Ipomoea lacunosa L. *768, 828, 2819.*
Convolvulus sepium L. *3075, 3136.*
Convolvulus repens L. *3428.*
Convolvulus fraterniflorus Mack. & Bush. *3451.*
Convolvulus arvensis L. *523, 529.*
Cuscuta obtusiflora HBK. *808, 1291, 1392, 3274.*
Cuscuta arvensis Beyrich. *432, 3063.*

Cuscuta Cephalanthi Engelm. *3197, 3835.*
Cuscuta Gronovii Willd. *2737, 3821.*
Cuscuta paradoxa Raf. *818, 3069, 3129, 3861.*

POLEMONIACEAE

Phlox pilosa L. *503, 1546, 1742, 3957.*
Phlox divaricata L. *398, 557.*
Polemonium reptans L. *581, 953, 1545.*

HYDROPHYLLACEAE

Hydrophyllum virginianum L. *319, 2040, 2076.*
Ellisia Nyctelea L. *738, 1853.*
Phacelia dubia (L.) Small. *261, 1879, 1888.*
Phacelia hirsuta Nutt. *739, 2048.*

BORAGINACEAE

Heliotropium tenellum (Nutt.) Torr. *439, 478, 1070, 2525, 3849.*
Lappula virginiana (L.) Greene. *422, 874, 2604, 3797.*
Myosotis virginica (L.) BSP. *507, 547, 3621, 3637.*
Myosotis virginica, var. macrosperma (Engelm.) Fernald. *1906, 3569, 3663.*
Lithospermum canescens (Michx.) Lehm. *579, 1612, 3622.*
Lithospermum arvense L. *3406.*
Lithospermum angustifolium Michx. *580, 1590, 2370, 2381.*
Onosmodium molle Michx. *2050, 2140.*
Onosmodium occidentale Mack. *1069.*
Onosmodium hispidissimum Mack. *347, 472, 2303.*

VERBENACEAE

Verbena urticaefolia L. *197.*
Verbena angustifolia Michx. *200, 2981, 3319.*
Verbena hastata L. *189, 1085, 1086, 2483.*
Verbena stricta Vent. *199, 675, 2980.*
Verbena bracteosa Michx. *454.*
Verbena canadensis (L.) Britton. *304, 559.*
Verbena angustifolia × stricta *2932.*
Verbena bracteosa × stricta *601, 4025.*
Lippia lanceolata Michx. *362, 2996, 3111, 3247, 3820.*

LABIATAE

Teucrium canadense L. *277, 2541, 2568.*
Isanthus brachiatus (L.) BSP. *934, 950, 3087.*
Scutellaria lateriflora L. *932, 2651.*
Scutellaria incana Muhl. *8, 652.*
Scutellaria cordifolia Muhl. *931, 2351, 2355, 2372.*
Scutellaria parvula Michx. *505, 510, 516, 545, 2526.*
Marrubium vulgare L. *474.*
Agastache nepetoides (L.) Ktze. *772, 1058, 3095.*
Nepeta Cataria L. *276.*
Nepeta hederacea (L.) Trevisan. *1679, 2060, 3990.*
Prunella vulgaris L. *280.*
Physostegia virginiana (L.) Benth. *196.*
Lamium amplexicaule L. *1622, 1710.*
Lamium purpureum L. *1753, 1989.*
Leonurus Cardiaca L. *1060, 3782.*
Stachys tenuifolia Willd. *429, 598, 790, 3021.*
Stachys latidens Small. *2569.*
Salvia Pitcheri Torr. *118, 1061.*
Salvia lanceaefolia Poir. *1312, 3285.*
Monarda fistulosa L. *3060.*
Monarda mollis L. *203, 1059, 3043,* (*6045* of *B. F. Bush.*)
Monarda Bradburiana Beck. *518, 2318.*
Monarda citriodora Cerv. *3800.*
Blephilia ciliata (L.) Raf. *2952.*
Blephilia hirsuta (Pursh) Benth. *470, 3078.*
Hedeoma pulegioides (L.) Pers. *770.*
Hedeoma hispida Pursh. *515.*
Hedeoma acinoides Scheele. *2007.*
Melissa officinalis L. *935.*
Pycnanthemum flexuosum (Walt.) BSP. *320, 2782.*
Pycnanthemum pilosum Nutt. *317, 3809.*
Cunila origanoides (L.) Britton. *3200.*
Lycopus rubellus Moench. *933, 1311, 3883.*
Lycopus virginicus L. *3260.*
Lycopus membranaceus Bicknell. *3843.*
Lycopus americanus Muhl. *424, 3857.*
Mentha rotundifolia (L.) Huds. *1987, 3042.*

MENTHA SPICATA L. *1057, 2473, 2581.*
MENTHA PIPERITA L. *2024, 2331.*
MENTHA CITRATA Ehrh. *3185.*
MENTHA CANADENSIS, var. GLABRATA Benth. *2780, 3223.*
PERILLA FRUTESCENS (L.) Britton. *930.*

SOLANACEAE

SOLANUM NIGRUM L. *257, 3109, 3208, 3220, 3227.*
SOLANUM CAROLINENSE L. *256.*
SOLANUM ELAEAGNIFOLIUM Cav. *918, 1324.*
SOLANUM ROSTRATUM Dunal. *477.*
PHYSALIS ANGULATA L. *3093, 3221.*
PHYSALIS PUBESCENS L. *805.*
PHYSALIS PRUINOSA L. *2552, 3198.*
PHYSALIS BARBADENSIS Jacq. *2466.*
PHYSALIS MISSOURIENSIS Mack. & Bush. *1252, 2988.*
PHYSALIS PUMILA Nutt. *253, 779, 1136, 2510, 2530.*
PHYSALIS HETEROPHYLLA Nees. *526, 917, 2081, 2511.*
PHYSALIS SUBGLABRATA Mack. & Bush. *255, 414, 904, 3110.*
PHYSALIS VIRGINIANA Mill. *254, 2008, 2500, 3776.*
LYCIUM HALIMIFOLIUM Mill. *1135.*
DATURA STRAMONIUM L. *2487.*
DATURA TATULA L. *258.*
DATURA METEL L. *916.*

SCROPHULARIACEAE

VERBASCUM THAPSUS L. *679.*
VERBASCUM BLATTARIA L. *269, 270, 4021.*
LINARIA VULGARIS Hill. *3044.*
LINARIA CANADENSIS (L.) Dumont. *896, 897, 1785.*
COLLINSIA VIOLACEA Nutt. *281, 947, 1767, 1823, 1856.*
SCROPHULARIA MARILANDICA L. *434, 1296.*
PENTSTEMON TUBIFLORUS Nutt. *90, 195.*
PENTSTEMON DIGITALIS (Sweet) Nutt. *194, 483, 937.*
MIMULUS RINGENS L. *1481.*
MIMULUS ALATUS Ait. *420, 951, 1075, 1550.*
CONOBEA MULTIFIDA (Michx.) Benth. *430.*
BACOPA ACUMINATA (Walt.) Robinson. *799, 840, 2816.*
BACOPA ROTUNDIFOLIA (Michx.) Wettst. *338, 2383.*

Ilysanthes dubia (L.) Barnhart. *1299, 3249.*
Ilysanthes anagallidea (Michx.) Robinson. *360, 1053, 1492.*
Gratiola virginiana L. *512, 549, 1992, 2124, 3685.*
Gratiola sphaerocarpa Ell. *1966, 2176, 2297.*
Veronica virginica L. *11.*
Veronica peregrina L. *355, 3647, 3680.*
Veronica arvensis L. *363, 1806.*
Dasistoma macrophylla (Nutt.) Raf. *418.*
Aureolaria grandiflora, var. cinerea Pennell. *1, 10, 1298, 2616.*
Tomanthera auriculata (Michx.) Raf. *613, 825.*
Agalinis aspera (Doug.)Britton. *2674.*
Agalinis fasciculata (Ell.) Raf. *604, 938, 1054, 1477, 3816, 3817, 3833, 3863.*
Agalinis tenuifolia (Vahl) Raf. *939, 833, 1140, 3132, 3148, 3818, 3862, 3875.*
Agalinis Besseyana Britton. *603, 1055, 2645, 3232, 3871, 3884.*
Agalinis Gattingeri Small. *936, 1056, 1422, 2302, 3103, 3131, 3202, 3206.*
Agalinis viridis (Small) Pennell. *816.*
Buchnera americana L. *108, 2441, 3064.*
Castilleja coccinea (L.) Spreng. *502, 3408, 3639, 3640.*
Pedicularis canadensis L. *549.*

LENTIBULARIACEAE

Utricularia vulgaris L. *2321, 3259.*
Utricularia minor L. *3258.*

OROBANCHACEAE

Orobanche uniflora L. *703.*

BIGNONIACEAE

Tecoma radicans (L.) Juss. *18.*
Catalpa speciosa Warder. *884.*
Catalpa bignonioides Walt. *2307.*

ACANTHACEAE

Dianthera americana L. *297, 458.*
Ruellia ciliosa Pursh. *356, 1309.*
Ruellia strepens L. *528, 1310.*
Diapedium brachiatum (Pursh) Ktze. *599, 1482, 1591.*

PHRYMACEAE

Phryma Leptostachya L. *455, 1098.*

PLANTAGINACEAE

Plantago major L. *2580.*
Plantago Rugelii Dene. *157, 2349.*
Plantago lanceolata L. *159.*
Plantago media L. *1854.*
Plantago aristata Michx. *235.*
Plantago virginica L. *158, 1244, 1889, 1975.*
Plantago elongata Pursh. *546, 1790.*

RUBIACEAE

Galium virgatum Nutt. *542, 2143.*
Galium Aparine L. *2025.*
Galium Vaillantii DC. *353.*
Galium pilosum Ait. *336, 746, 747, 2248.*
Galium circaezans Michx. *354.*
Galium tinctorium L. *2180, 2208, 3745.*
Galium concinnum T. & G. *522, 1082, 2215, 3725.*
Galium triflorum Michx. *1076, 2252, 2375.*
Spermacoce glabra Michx. *411, 782.*
Diodia teres Walt. *265, 273, 1255, 1325.*
Cephalanthus occidentalis L. *29, 396.*
Houstonia minima Beck. *653, 654, 1133, 3543, 3619, 3643.*
Houstonia purpurea L. *1250, 3011.*

CAPRIFOLIACEAE

Lonicera sempervirens L. *3186.*
Lonicera dioica L. *1912, 2078.*
Lonicera japonica Thunb. *465, 607, 1077.*
Symphoricarpos orbiculatus Moench. *97, 733, 734, 737, 796.*
Triosteum perfoliatum L. *731, 732.*
Viburnum Lentago L. *9, 1556.*
Viburnum prunifolium L. *30, 378, 898, 1144, 3610.*
Viburnum rufidulum Raf. *69, 394, 734, 1253.*
Sambucus canadensis L. *76, 1439, 3798.*
Sambucus canadensis, var. submollis f. Engelmanni Rehder. *3445, 3779.*

VALERIANACEAE

VALERIANELLA RADIATA (L.) Dufr. *303, 1248, 1993.*

CUCURBITACEAE

SICYOS ANGULATUS L. *597, 781.*
ECHINOCYSTIS LOBATA (Michx.) T. & G. *878, 1259.*

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SPECULARIA PERFOLIATA (L.) A. DC. *570, 671, 2148, 2158, 3962.*
SPECULARIA BIFLORA (R. & P.) Fisch. & Mey. *481.*
SPECULARIA LEPTOCARPA (Nutt.) Gray. *925, 2262, 2302, 3982.*
CAMPANULA AMERICANA L. *341, 672.*

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LOBELIA CARDINALIS L. *803, 910, 1134.*
LOBELIA SIPHILITICA L. *602.*
LOBELIA LEPTOSTACHYS A. DC. *190, 924.*
LOBELIA SPICATA, var. HIRTELLA Gray. *191, 457, 2095.*
LOBELIA INFLATA L. *417, 466, 3802.*

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CICHORIUM INTYBUS L. *3046.*
SERINIA OPPOSITIFOLIA (Raf.) Ktze. *366.*
KRIGIA OCCIDENTALIS Nutt. *3936.*
KRIGIA VIRGINICA (L.) Willd. *1883, 3668.*
KRIGIA DANDELION (L.) Nutt. *332, 1858.*
KRIGIA AMPLEXICAULIS Nutt. *655, 1891.*
TARAXACUM OFFICINALE Weber. *566, 3949.*
SONCHUS ARVENSIS L. *3239.*
SONCHUS ASPER (L.) Hill. *316, 2968.*
LACTUCA SCARIOLA L. *2463.*
LACTUCA SCARIOLA, var. INTEGRATA Gren. & Godr. *413, 1083, 1084.*
LACTUCA CANADENSIS L. *904, 2698, 3130.*
LACTUCA SAGITTIFOLIA Ell. *412.*
LACTUCA VILLOSA Jacq. *794.*
LACTUCA FLORIDANA (L.) Gaertn. *802.*
PRENANTHES ASPERA Michx. *312, 3176.*
PYRRHOPAPPUS CAROLINIANUS (Walt.) DC. *329, 541, 2194.*
HIERACIUM SCABRUM Michx. *3165.*
HIERACIUM GRONOVII L. *498, 2257, 3082, 3124, 3166.*

HIERACIUM LONGIPILUM Torr. *462*, *2998*, *4018*.
IVA CILIATA Willd. *785*.
AMBROSIA BIDENTATA Michx. *426*.
AMBROSIA TRIFIDA L. *774*, *1141*.
AMBROSIA ARTEMISIAEFOLIA L. *428*.
AMBROSIA PSILOSTACHYA DC. *2559*, *2663*.
XANTHIUM ECHINATUM Murr. *1303*.
XANTHIUM PENNSYLVANICUM Wallr. *766*, *767*.
XANTHIUM COMMUNE Britton. *1039*, *1300*.
XANTHIUM GLABRATUM Britton. *1301*, *1304*.
VERNONIA CRINITA Raf. *103*, *2576*, *2684*, *3243*, *3244*.
VERNONIA ALTISSIMA Nutt. *789*.
VERNONIA BALDWINI Torr. *94*, *2560*, *2586*, *2614*, *2722*, *2724*, *2732*.
VERNONIA BALDWINI × CRINITA. *2654*, *2724*.
ELEPHANTOPUS CAROLINIANUS Willd. *349*.
EUPATORIUM MACULATUM L. *331*, *4014*.
EUPATORIUM SEROTINUM Michx. *2683*.
EUPATORIUM ALTISSIMUM L. *17*, *2642*, *2685*.
EUPATORIUM PERFOLIATUM L. *863*.
EUPATORIUM URTICAEFOLIUM Reichard. *107*, *3887*.
EUPATORIUM COELESTINUM L. *326*, *913*, *3105*.
KUHNIA EUPATORIOIDES L. *328*, *1035*, *2731*.
LIATRIS SQUARROSA Willd. *860*, *861*, *1351*, *3856*.
LIATRIS SCARIOSA Willd. *112*, *2849*.
LIATRIS PYCNOSTACHYA Michx. *1033*, *1348*.
GRINDELIA LANCEOLATA Nutt. *181*, *2578*.
AMPHIACHYRIS DRACUNCULOIDES (DC.) Nutt. *113*, *4033*.
CHRYSOPSIS PILOSA Nutt. *1346*, *3026*.
SOLIDAGO SPECIOSA Nutt. *2823*, *3872*.
SOLIDAGO RIGIDIUSCULA (T. & G.) Porter. *1012*, *2677*.
SOLIDAGO ARGUTA Ait. *2688*.
SOLIDAGO ULMIFOLIA Muhl. *12*, *916*.
SOLIDAGO RUGOSA Mill. *109*, *110*.
SOLIDAGO GLABERRIMA Martens. *1010*, *2565*, *3068*, *3988*.
SOLIDAGO NEMORALIS Ait. *2693*, *2839*, *3853*, *3868*.
SOLIDAGO RADULA Nutt. *2831*.
SOLIDAGO ALTISSIMA L. *1006*.
SOLIDAGO ALTISSIMA, var. PROCERA (Ait.) Fernald. *1008*, *1009*.

Solidago serotina Ait. *1007, 1350.*

Solidago rigida L. *111.*

Solidago petiolaris Ait. *88, 325.*

Solidago Wardii Britton. *1350, 2622, 2694, 3190, 3869.*

Euthamia graminifolia (L.) Nutt. *196.*

Boltonia asteroides (L.) L'Her. *209, 220, 3853.*

Boltonia latisquama Gray. *3873.*

Aster paludosus Ait. *605, 1328, 3177.*

Aster oblongifolius, var. rigidulus Gray. *907, 1336, 1337, 3852.*

Aster patens Ait. *1475, 3866, 1335.*

Aster anomalus Engelm. *1338, 1339.*

Aster azureus Lindl. *101, 914, 1331.*

Aster sagittifolius Wedemeyer. *87, 324, 1332.*

Aster Drummondii Lindl. *851, 3864.*

Aster turbinellus Lindl. *323, 1334, 3865.*

Aster ericoides L. *1329.*

Aster ericoides, var. pilosus Porter. *1327, 1595, 2778.*

Aster multiflorus Ait. *2814, 51, 1015, 1030.*

Aster Tradescanti L. *1015, 1326, 2846.*

Aster paniculatus Lam. *852.*

Aster salicifolius Ait. *83, 106, 1014, 3885.*

Aster linariifolius L. *865, 905.*

Erigeron pulchellus Michx. *564, 692, 824, 1341.*

Erigeron philadelphicus L. *698, 1340, 1831, 1972.*

Erigeron annuus (L.) Pers. *754, 3965, 3954.*

Erigeron ramosus (Walt.) BSP. *204, 1029, 2109, 3958, 3980.*

Erigeron tenuis T. & G. *1898, 2003.*

Erigeron nudiflorus T. & G. *2097.*

Pluchea petiolata Cass. *1511, 3880.*

Antennaria occidentalis Greene. *313.*

Antennaria longifolia Greene. *3901.*

There are probably two or three other species of this genus occurring in the county, the classification of which is not clear at present.

Gnaphalium purpureum L. *524, 1344, 3010.*

Gnaphalium obtusifolium L. *2725, 3201.*

Polymnia uvedalia L. *327, 866, 3159.*

Silphium laciniatum L. *183, 3439.*
Silphium integrifolium Michx. *857, 3459, 1024, 1345.*
Silphium perfoliatum L. *774, 3805.*
Berlandiera texana DC. *2316.*
Parthenium integrifolium L. *536, 952.*
Parthenium repens Eggert. *700, 701, 3961, 3978.*
Eclipta alba (L.) Hassk. *404, 3719.*
Rudbeckia triloba L. *1021, 3209, 3430.*
Rudbeckia subtomentosa Pursh. *867, 1022, 1347, 2415.*
Rudbeckia hirta L. *182, 1020, 2319, 3788.*
Rudbeckia speciosa Wenderoth. *3234.*
Rudbeckia laciniata L. *1036.*
Rudbeckia amplexicaulis Vahl. *2255.*
Brauneria pallida (Nutt.) Britton. *187.*
Lepachys pinnata (Vent.) T. & G. *1031, 1032, 2563.*
Helianthus annuus L. *803, 2592, 2850.*
Helianthus petiolaris Nutt. *856.*
Helianthus scaberrimus Ell. *184, 1025.*
Helianthus mollis Lam. *186.*
Helianthus grosseserratus Martens. *114, 1343.*
Helianthus hirsutus Raf. *407, 1023.*
Helianthus hirsutus, var. trachyphyllus T. & G. *1026.*
Helianthus tuberosus L. *2713.*
Helianthus tuberosus, var. subcanescens Gray. *1478, 2659.*
Actinomeris alternifolia (L.) DC. *322, 810, 3157.*
Verbesina virginica L. *310, 321.*
Verbesina helianthoides Michx. *864, 3752.*
Coreopsis tinctoria Nutt. *850, 2387, 2507.*
Coreopsis grandiflora Hogg. *179.*
Coreopsis pubescens Ell. *370, 371, 806, 849.*
Coreopsis palmata Nutt. *1030.*
Coreopsis tripteris L. *798, 2584.*
Bidens frondosa L. *853, 854, 855, 2692.*
Bidens cernua L. *1019, 1479.*
Bidens cernua, var. elliptica Wieg. *1018.*
Bidens bipinnata L. *309, 1017.*
Bidens aristosa (Michx.) Britton. *1480.*
Bidens involucrata (Nutt.) Britton. *180.*

MARSHALLIA CAESPITOSA Nutt. *2015, 2153.*
HELENIUM NUDIFLORUM Nutt. *2315, 3233.*
HELENIUM AUTUMNALE L. *85, 1037, 3860.*
HELENIUM TENUIFOLIUM Nutt. *318, 3889.*
DYSSODIA PAPPOSA (Vent.) Hitchc. *827, 3192.*
ACHILLEA MILLEFOLIUM L. *315.*
ANTHEMIS COTULA L. *744.*
MATRICARIA SUAVEOLENS (Pursh) Buchenau. *2372, 4013.*
CHRYSANTHEMUM LEUCANTHEMUM L. *330, 3709, 3981.*
TANACETUM VULGARE, var. INCISUM DC. *2548.*
ARTEMISIA LUDOVICIANA Nutt. *1027, 1028, 2747, 3473, 3874.*
ARTEMISIA MEXICANA Willd. *906.*
ARTEMISIA ANNUA L. *1034.*
ERECHTITES HIERACIFOLIA (L.) Raf. *903.*
CACALIA ATRIPLICIFOLIA L. *868, 2598.*
CACALIA TUBEROSA Nutt. *534.*
SENECIO OBOVATUS, var. ROTUNDUS Britton. *859, 1342, 1667, 1834, 3521, 3669.*
SENECIO PLATTENSIS Nutt. *314, 3383, 3942.*
ARCTIUM MINUS Bernh. *858.*
CIRSIUM LANCEOLATUM (L.) Hill. *2502.*
CIRSIUM DISCOLOR (Muhl.) Spreng. *3058.*
CIRSIUM ALTISSIMUM (L.) Spreng. *189.*
LEPTILON CANADENSE (L.) Britton. *403, 769.*
LEPTILON DIVARICATUM (Michx.) Raf. *1169.*